

Geometry Examinations of Governorates 2012

Cairo

1

Sharabia Educational Zone - Talale El Mostakabel Exp. Lang. School

Answer the following questions:

1 Choose the correct answer:

- The number of axes of symmetry in the equilateral triangle =
 - 1
 - 2
 - 3
 - nothing
- In a triangle ABC: If $AC = BC$ and $m(\angle C) = 80^\circ$, then $m(\angle A) = \dots\dots\dots$
 - 80°
 - 50°
 - 100°
 - 40°
- $\triangle XYZ$, $m(\angle X) = 60^\circ$, $m(\angle Y) = 40^\circ$, then $XZ \dots\dots\dots ZY$
 - $<$
 - $>$
 - $=$
 - nothing
- If \overline{XE} is a median in $\triangle XYZ$, M is the point of intersection of its medians, then $EM = \dots\dots\dots XE$
 - $\frac{1}{2}$
 - 2
 - $\frac{1}{3}$
 - $\frac{2}{3}$
- $\triangle ABC$ if $m(\angle A) = 30^\circ$ and $m(\angle B) = 90^\circ$, then $AC = \dots\dots\dots$
 - $\frac{1}{2} BC$
 - $2 BC$
 - $2 AB$
 - BC

2 Complete the following:

- The two base angles in an isosceles triangle are
- The bisector of the vertex angle of an isosceles triangle the base and is to it.
- The sum of the lengths of any two sides in a triangle is the length of the third side.
- If ABC is a right-angled triangle at B, $AB = 6$ cm, $BC = 8$ cm, if \overline{BD} is a median of triangle ABC, then $BD = \dots\dots\dots$ cm.
- In triangle ABC, if $BC > AB$, then $m(\angle A) \dots\dots\dots m(\angle C)$

3 In the opposite figure:

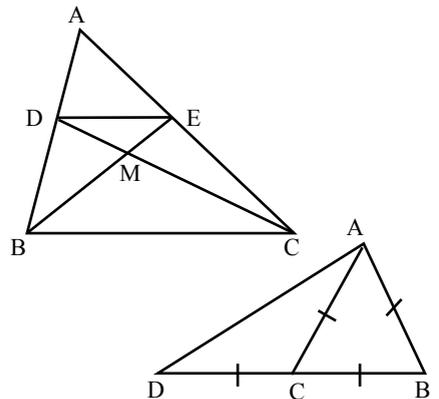
\overline{BE} , \overline{CD} , are medians in $\triangle ABC$,
 $MB = 6$ cm., $MC = 8$ cm.,
 $BC = 12$ cm.,

Find: The perimeter of $\triangle MDE$

4 (a) In the opposite figure:

$AB = BC = AC = DC$

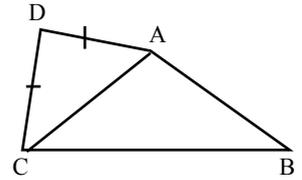
Prove that: $m(\angle BAD) = 90^\circ$



(b) In the opposite figure:

ABCD is a quadrilateral in which: $AD = DC$,
 $BC > AB$

Prove that: $m(\angle BAD) > m(\angle CAD)$

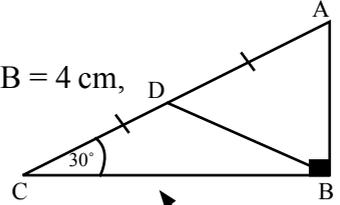


5 (a) In the opposite figure:

$m(\angle B) = 90^\circ$, $m(\angle C) = 30^\circ$, \overline{BD} is a median, $AB = 4$ cm,

Complete:

$AC = \dots\dots\dots$ cm, $BD = \dots\dots\dots$ cm, $AD = \dots\dots\dots$ cm.



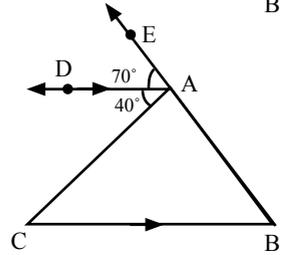
(b) In the opposite figure:

$E \in \overrightarrow{BA}$, $\overrightarrow{AD} \parallel \overrightarrow{BC}$,

$m(\angle DAE) = 70^\circ$,

$m(\angle DAC) = 40^\circ$,

Prove that: $AC > AB$



Answer the following questions:

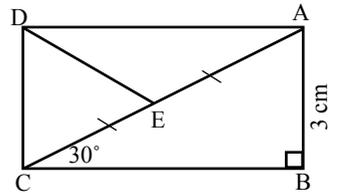
1 Choose the correct answer:

- 1) In ΔABC : $m(\angle B) = 80^\circ$, $m(\angle C) = 50^\circ$, then $BC \dots\dots\dots AB$
 a) $>$ b) $<$ c) $=$ d) \equiv
- 2) The lengths 6 cm, 7cm and $\dots\dots\dots$ can be lengths of the sides of a triangle.
 a) 15 cm b) 13 cm c) 18 cm d) 11 cm
- 3) In ΔABC if $m(\angle A) = 30^\circ$ and $m(\angle B) = 90^\circ$ then $AC = \dots\dots\dots$
 a) $\frac{1}{2} BC$ b) $2 BC$ c) $2 AB$ d) BC
- 4) The point of intersection of the medians of the triangle divides each of them with ratio $\dots\dots\dots$ from the vertex.
 a) $1 : 2$ b) $3 : 1$ c) $1 : 3$ d) $2 : 1$
- 5) In ΔABC , $m(\angle A) = 50^\circ$ and $m(\angle B) = 100^\circ$ then
 a) $AB > AC$ b) $AC > AB$ c) $BC > AC$ d) $AB = BC$

2 Complete:

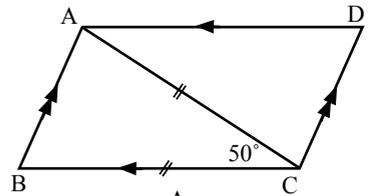
- 1) The measure of exterior angle of the equilateral $\Delta = \dots\dots\dots^\circ$
- 2) If $\Delta ABC = \Delta XYZ$, then $AC \equiv \dots\dots\dots$
- 3) The longest side in a right-angled triangle is $\dots\dots\dots$
- 4) The perpendicular bisector of a line segment is called $\dots\dots\dots$
- 5) The bisector of the vertex angle of an isosceles triangle is $\dots\dots\dots$

- 3 (a) In the opposite Fig.:** $m(\angle B) = m(\angle D) = 90^\circ$
 $m(\angle ACB) = 30^\circ$ and \overline{DE} , is a median of $\triangle ADC$.
 If $AB = 3$ cm, find with proof the length to \overline{DE} .



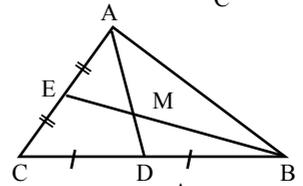
(b) in the opposite Fig.:

$ABCD$ is a parallelogram, $CA = CB$
 and $m(\angle ACB) = 50^\circ$.
 Find with proof $m(\angle D)$



- 4 (a) In the opposite Fig.:** E and D are the midpoints
 of \overline{AC} , and \overline{CB} . If $AD = 4.5$ cm and $BM = 4$ cm

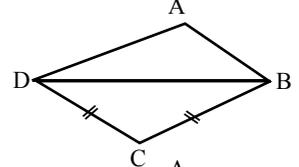
Find the length of \overline{MD} and \overline{BE}



(b) In the opposite Fig. $ABCD$ is a quadrilateral

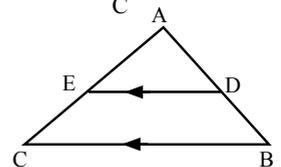
in which $AD > AB$ and $BC = CD$

Prove that: $m(\angle ABC) > m(\angle ADC)$.



- 5 In the opposite Fig.**

$\overline{AC} > \overline{AB}$, $\overline{DE} \parallel \overline{BC}$
 Prove that $AE > AD$



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- 1 Choose the correct answer:**

- The number of axes of symmetry of the equilateral triangle is
 - 3
 - 1
 - 2
 - 4
- The medians of the triangle intersect at
 - one point
 - two points
 - 3 points
 - 4 points
- The sum of lengths of any two sides in any triangle the length of the third side.
 - is less than
 - is greater than
 - equals
 - otherwise
- In the parallelogram, the two diagonals are
 - equal in length
 - perpendicular
 - bisecting each other
 - parallel
- If $\triangle ABC$ is right-angled at B , then AB AC
 - \equiv
 - \perp
 - $<$
 - $>$

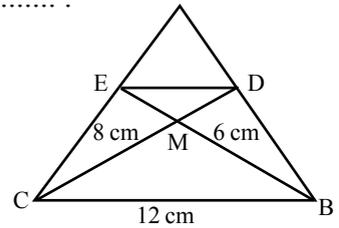
- 2 Complete the following statements:**

- The longest side in the right-angled triangle is
- The point of intersection of the medians of the triangle divides each of them with the ratio : from the base.

- 3) The length of the side opposite the angle of measure 30° in the right-angled equals
- 4) The perpendicular bisector of a line segment is called
- 5) In the parallelogram, each two opposite sides are

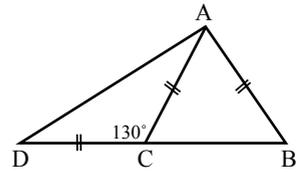
3 a) In the opposite figure:

\overline{BE} , and \overline{CD} are two medians
 in $\triangle ABC$, $MB = 6$ cm, $MC = 8$ cm
 and $CB = 12$ cm.
 Find the perimeter of $\triangle EMD$



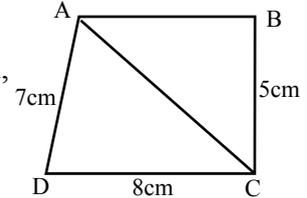
(b) In the opposite Figure:

$CD = CA = AB$, $C \in BD$
 and $m(\angle ACD) = 130^\circ$
 Find by proof $m(\angle BAD)$



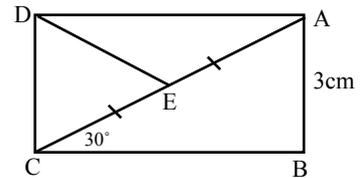
4 In the opposite figure:

ABCD is a quadrilateral in which $AB = 4$ cm, $BC = 5$ cm,
 $CD = 8$ cm and $AD = 7$ cm
 Prove that: $m(\angle BAD) > m(\angle BCD)$



5 In the opposite figure:

$m(\angle ABC) = m(\angle ADC) = 90^\circ$
 $m(\angle ACB) = 30^\circ$ and
 \overline{DE} is a median of $\triangle ADC$
 if $AB = 3$ cm,
 Find the length of \overline{DE}



1 Complete each of the following:

- a) The longest side in the right-angled triangle is
- b) If the lengths of two sides in the isosceles triangle are 3 cm and 8 cm, then the length of the the third side = cm.
- c) The length of the side opposite to the angle whose measure = 30 in the right-angled triangle equals
- d) in $\triangle XYZ$: if $m(\angle X) > m(\angle Y) > m(\angle Z)$ then $> XZ >$
- e) The point of intersection of the medians of a triangle divides each median by the ratio from the base.

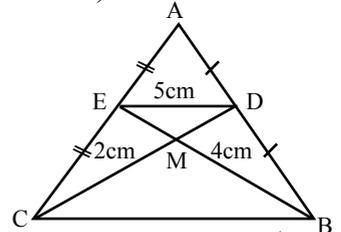
2 Choose the correct answer:

- 1) The number of the axes of symmetry of the equilateral triangle is
- a) 1 b) 2 c) 3 d) zero
- 2) In $\triangle ABC$: If $m(\angle A) = 75^\circ$, $m(\angle C) = 50^\circ$, then AC AB
- a) $>$ b) $=$ c) \leq d) $<$

- 3) The sum of lengths of any two sides in the triangle the length of the third side.
 a) $>$ b) \geq c) \leq d) $<$
- 4) \overline{AD} is a median of $\triangle ABC$ where M is the point of inter section of its median, then $AM = \dots\dots\dots \overline{AD}$
 a) $\frac{1}{3}$ b) $\frac{2}{3}$ c) $\frac{1}{2}$ d) 2
- 5) If \overline{AD} is a median of $\triangle ABC$, then
 a) $AB = BC$ b) $BD = DC$ c) $AD + BC$ d) $AB = AC$

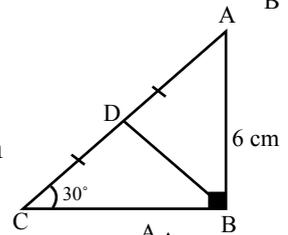
3 a) In the opposite figure:

\overline{BE} and \overline{CD} are two medians in $\triangle ABC$,
 $ME = 2$ cm, $MD = 4$ cm and $DE = 5$ cm
 Find: the perimeter of $\triangle MBC$



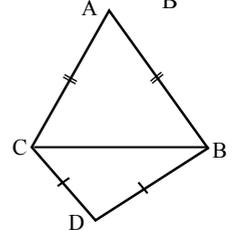
(b) In the opposite figure:

ABC is a right-angled triangle at B,
 D is the midpoint of \overline{AC} , $m(\angle C) = 30^\circ$ and $AB = 6$ cm
 Find the length of \overline{AC} and \overline{BD}



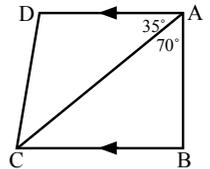
4 a) In the opposite figure:

$AB = AD$,
 $BC = CD$
 Prove that $\angle ABC \equiv \angle ADC$



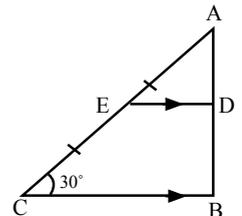
(b) in the opposite figure:

$\overline{AD} \parallel \overline{BC}$, $(\angle BAC) = 70^\circ$
 and $m(\angle DAC) = 35^\circ$
 prove that: $AC > BC$



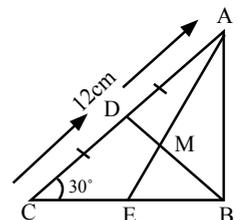
5 a) In the opposite figure:

ABC is a triangle in which
 $AC > AB$, $\overline{DE} \parallel \overline{BC}$
 prove that: $AE > AD$



(b) In the opposite figure:

$\triangle ABC$ is a right-angled triangle at B,
 \overline{AE} and \overline{BD} are medians if $AC = 12$ cm.
 Calculate the length of each \overline{BD} and \overline{MD} .



1 Choose the correct answer:

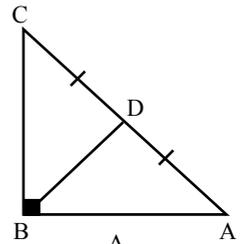
- The number of axis of symmetry in the scalene triangle is.....
 - 1
 - 2
 - 4
 - zero
- The lengths 9 cm, 4 cm and may be the lengths of isosceles triangle.
 - 3 cm
 - 4 cm
 - 5 cm
 - 9 cm
- In triangle the sum of the lengths of two sides the length of the third side.
 - $>$
 - $<$
 - $=$
 - \leq
- $\triangle ABC$ in which $m(\angle A) = 40^\circ$ and $m(\angle B) = 70^\circ$, then AB AC .
 - $>$
 - $=$
 - \equiv
 - $<$
- The measure of the exterior angle of an equilateral triangle
 - 30°
 - 120°
 - 60°
 - 90°

2 Complete each of the following:

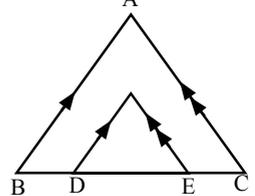
- The point of intersection of the medians of a triangle divides each median in the ratio from the vertex.
- In the right-angled triangle, the longest side in it is called
- In the right-angled triangle, the opposite side to angle with measure equals $30^\circ =$ the length of the hypotenuse.
- In an isosceles triangle, if any angle has a measure of 60° , the triangle is
- $\triangle ABC$ in which $m(\angle B) = 70^\circ$ and $m(\angle C) = 35^\circ$, the longest side in length is

3 (a) In the opposite figure:

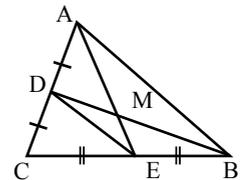
ABC is a right-angled triangle at B ,
 D is the midpoint of \overline{AC} , $m(\angle A) = 30^\circ$,
 $BC = 5$ cm. Find: the length of \overline{BD} .

**(b) in the opposite Figure:**

$D \in \overline{BC}$, $E \in \overline{BC}$, $\overline{AB} \parallel \overline{FD}$
 and $\overline{AC} \parallel \overline{FE}$, if $AB = AC$. prove that:
 FDE is an isosceles triangle.

**4 (a) In the opposite figure:**

$\triangle ABC$ in which D and E midpoint of \overline{AC} , \overline{BC}
 $\overline{AE} \cap \overline{BD} = \{M\}$
 $AB = 12$ cm, $AE = 9$ cm, $BM = 8$ cm
 Calculate the perimeter of $\triangle DME$



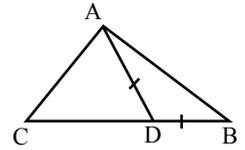
- (b)** $\triangle XYZ$ in which $XY = 8$ cm, $YZ = 10$ cm and $ZX = 7$ cm. Order the measures of its angles ascendingly.

5 In the opposite figure:

ABC is a triangle in which, $BC > AB$

$D \in \overline{BC}$ such that $AD = BD$.

Prove that: $(\angle BAC)$ is an obtuse angle.



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1 Choose the correct answer:

- 1) Number of axes of symmetry of an equilateral triangle is
 - a) 0
 - b) 1
 - c) 2
 - d) 3
- 2) An isosceles triangle, one of its base angles has measure 50° , then the measure of the vertex angle =
 - a) 50°
 - b) 60°
 - c) 70°
 - d) 80°
- 3) \overline{AD} is a median of triangle ABC, and M is the point of intersection of the medians, then $AM = \dots\dots\dots AD$.
 - a) $\frac{1}{3}$
 - b) $\frac{2}{3}$
 - c) $\frac{1}{2}$
 - d) $\frac{1}{4}$
- 4) If the lengths of two sides of a triangle are 4 cm and 8 cm., then the length of the third side =cm.
 - a) 3
 - b) 4
 - c) 8
 - d) 12
- 5) In a triangle ABC: if $m(\angle A) = 80^\circ$, $m(\angle C) = 60^\circ$, then $AB \dots\dots\dots BC$.
 - a) $>$
 - b) $<$
 - c) $=$
 - d) \geq

2 Complete:

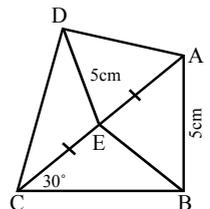
- 1) If XYZ is a right-angled triangle at Y, then the longest side is
- 2) The sum of measures of any two consecutive angles in the parallelogram =
- 3) The straight line perpendicular to the midpoint of a line segment is called
- 4) The bisectors of the vertex angle in an isosceles triangle and
- 5) The measure of the exterior angle of the equilateral triangle = $^\circ$.

3 a) In the opposite figure:

ABC is a right-angled triangle at B, $m(\angle ACB) = 30^\circ$

, $AB = 5$ cm. Point E bisects \overline{AC} if $DE = 5$ cm

, then prove that $m(\angle ADC) = 90^\circ$

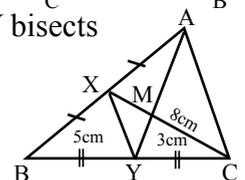


(b) In the opposite figure: ABC is a triangle, X bisects \overline{AB} , Y bisects

\overline{BC} , $XY = 5$ cm, $\overline{XC} \cap \overline{AY} = \{M\}$ where:

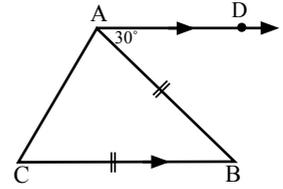
$CM = 8$ cm, $Ym = 3$ cm. Find with proof

the length of: 1) \overline{AM} 2) \overline{MX} 3) \overline{AC}



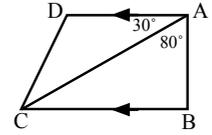
4 a) In the opposite figure:

ABC is a triangle in which $AC = BC$,
 $\overrightarrow{AD} \parallel \overrightarrow{BC}$, $m(\angle DAC) = 30^\circ$. Find
 the measures of the angles in ΔABC



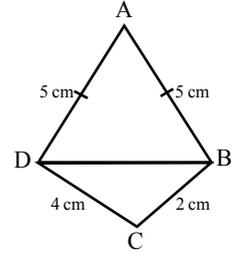
(b) In the opposite figure:

$\overrightarrow{AD} \parallel \overrightarrow{BC}$, $m(\angle BAC) = 80^\circ$, $m(\angle DAC) = 30^\circ$
 Prove that: $BC > AB$



5 In the opposite figure:

ABCD is a quadrilateral in which $AB = AD = 5\text{cm}$,
 $BC = 2\text{cm}$, $DC = 4\text{cm}$ Prove that:
 $m(\angle ABC) > m(\angle ADC)$



1 Complete the following:

- 1) The longest side length in the right-angled triangle is
- 2) The base angles of the isosceles triangle are
- 3) In a triangle, the smallest angle in measure is opposite to
- 4) The medians of a triangle are
- 5) If the angles of a triangle are congruent, then the triangle is

2 Choose the correct answer:

- 1) In ΔABC : if $m(\angle A) = 60^\circ$, $m(\angle B) = 40^\circ$, then the longest side in length is

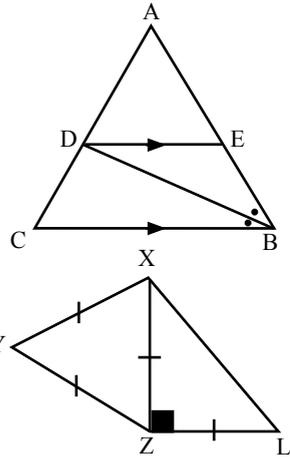
 (\overline{AB} , \overline{CA} , \overline{BC} , hypotenuse)
- 2) In the ΔABC if $XY = YZ$, $m(\angle Z) = 50^\circ$ then the $m(\angle X) =$
 (50° , 80° , 130° , 100°)
- 3) ΔABC if right-angle triangle at B, if $m(\angle A) = 30^\circ$, $BC = 10\text{ cm}$, then $AC =$

 (5 cm , 10 cm , 20 cm , 15 cm)
- 4) The measure of exterior angle of an equilateral triangle =
 (30° , 60° , 120° , 90°)
- 5) If the lengths of two sides in an isosceles triangle were: 3 cm , 7 cm , then the
 length of the third side =
 ($3\text{ cm} - 7\text{ cm} - 4\text{ cm} - 5\text{ cm}$)

3 (a) In the opposite figure:

ABC is a triangle in which \overline{BD} bisects $\angle ABC$
and intersects \overline{AC} at D, $\overrightarrow{DE} \parallel \overline{CB}$
 $\overrightarrow{DE} \parallel \overline{AB} = \{E\}$

Prove that $BE = ED$



(b) In the opposite figure:

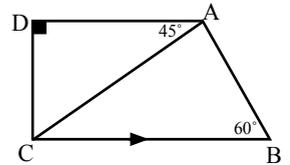
XYZL is quadrilateral in which
 $XY = ZL = ZX = XY$, $m(\angle ZXL) = 90^\circ$
find the $m(\angle XLZ)$, $m(\angle LXY)$

4 (a) In the opposite figure:

$\overline{AD} \parallel \overline{BC}$, $m(\angle D) = 90^\circ$, $m(\angle B) = 60^\circ$,
 $m(\angle DAC) = 45^\circ$

First: Prove that $AC \perp BC$

Second: Prove that $\triangle DAC$ is an isosceles triangle.



5 (a) In the opposite figure:

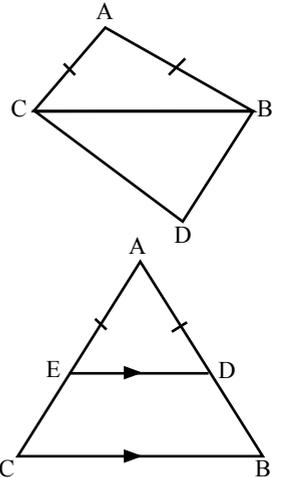
$AB = AC$, $DC > DB$

Prove that: $m(\angle ABD) > m(\angle ACD)$

(b) In the opposite figure:

$\overline{DE} \parallel \overline{BC}$, $AD = AE$

Prove that: $AB = AC$.



1 Choose the correct answer from those between parentheses:

- If \overline{AD} is a median of $\triangle ABC$ and M is the point of intersection of the medians then $AM = \dots\dots\dots AD$.
($\frac{1}{3}$, $\frac{2}{3}$, $\frac{1}{2}$, $\frac{1}{4}$)
- If $\triangle ABC$, $m(A) = 80^\circ$, $m(C) = 70^\circ$ then $AB \dots\dots BC$.
($>$, $<$, $=$, \geq)
- If the lengths of two sides of triangle are 3,7 then the length of 3rd side is $\dots\dots$.
(3, 4, 8, 10)

4) ΔABC , $m(\angle A) = 30^\circ$ $m(\angle B) = 90^\circ$ then $AC = \dots\dots\dots$.

$(\frac{1}{2} BC , 2 BC , 2 AB , BC)$

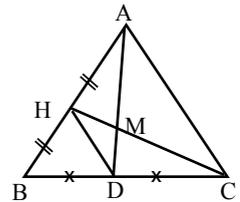
5) In the isosceles triangle if one of its base angle of measure 40° then its vertex angle is of $\dots\dots\dots$.
 $(40^\circ , 80^\circ , 100^\circ , 60^\circ)$

2 Complete the following:

- 1) The measure of the exterior angle of the equilateral triangle is $\dots\dots\dots^\circ$
- 2) The longest side in the right angled triangle is $\dots\dots\dots$.
- 3) The number of symmetrical axis in the equilateral triangle is $\dots\dots\dots$.
- 4) The bisector of the vertex angle of an isosceles triangle bisects the base and is $\dots\dots\dots$.
- 5) The medians of triangle are $\dots\dots\dots$.

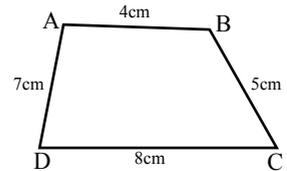
3 In the opposite figure:

D midpoint of \overline{BE} , H is a midpoint of \overline{AB} , $\overline{AD} \cap \overline{CH} = \{M\}$ $AD = 9$ cm
 $AC = 12$ cm, $CM = 10$ cm, find perimeter of ΔMDH



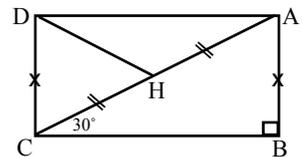
4 (a) In the opposite figure:

ABCD is quadrilateral $AB = 4$ cm
 $BC = 5$ cm $CD = 8$ cm $AD = 7$ cm
 Prove that: $m(\angle BAD) > m(\angle BCD)$.



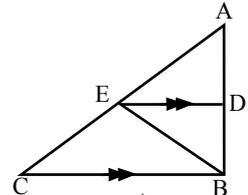
(b) $m(\angle B) = 90^\circ$ $m(\angle ACB) = 30^\circ$.

$AB = DH$, H is midpoint of \overline{AC}
 Prove that $m(\angle ADC) = 90^\circ$.



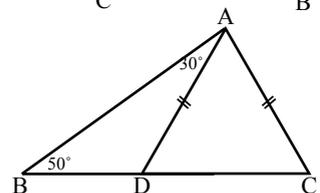
5 (a) In the opposite figure:

$\overline{ED} \parallel \overline{BC}$ and \overline{BE} bisects $\angle ABC$
 Prove that: ΔDBE is an isosceles Δ



(b) In the opposite figure:

$AC = AD$, $m(\angle DAB) = 30^\circ$ $m(\angle B) = 50^\circ$
 Find $m(\angle DAC)$



1 Choose the correct answer from the given ones:

- The area of rhombus whose diagonals lengths 6 cm, 8cm = cm²
a) 48 b) 24 c) 14 d) 12
- In $\triangle ABC$, if $(AC)^2 = (AB)^2 + (BC)^2$, then $\angle B$ is angle.
a) right b) obtuse c) acute d) straight
- The number of axes of symmetry in the equilateral triangle =
a) 1 b) 2 c) 3 d) nothing
- If the area of a parallelogram is 35 cm² and its height is 5 cm, then the length of the corresponding base iscm.
a) 5 b) 7 c) 9 d) 20
- A square with perimeter 16 cm/ then its area =cm²
a) 32 b) 40 c) 16 d) 20

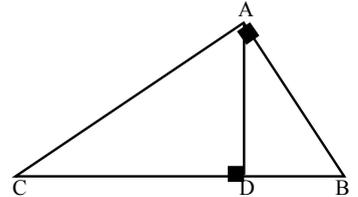
2 Complete each of the following:

- The median of a triangle divides its surface into two triangles are
- The two triangles are similar if the corresponding are proportional.
- If the lengths of two parallel bases in a trapezium are 8 cm and 10 cm and its height is 6 cm then its area =cm²

- In the opposite figure:

$\triangle ABC$ is right - angled at A
and $\overline{AD} \perp \overline{BC}$ then

$$(AB)^2 = \dots \times \dots$$

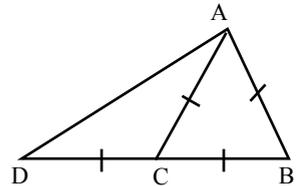


- Two triangles which have the same base and the vertices opposite this base on a straight line parallel to the base

3 (a) In the opposite figure:

$$AB = BC = AC = DC$$

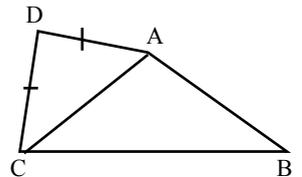
Prove that: $m(\angle BAD) = 90^\circ$

**(b) In the opposite figure:**

ABCD is a quadrilateral in which: $AD = DC$,

$$BC > AB$$

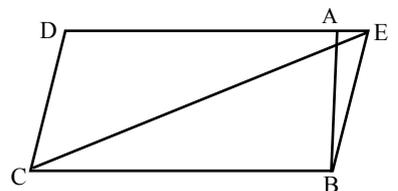
Prove that: $m(\angle CAD) > m(\angle BAD)$

**4 (a) In the opposite figure:**

$F \in \overrightarrow{DA}$ if the area of the parallelogram

$$ABCD = 40 \text{ cm}^2$$

Find area of $\triangle FBC$

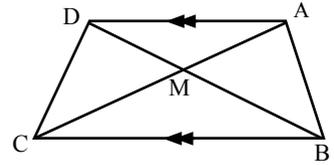


(b) In the opposite figure:

$$\overline{AD} \parallel \overline{BC}, \overline{AC} \cap \overline{DB} = \{M\}$$

Prove that

The area of $\Delta AMB =$ the area of ΔDMC



5 In the opposite figure:

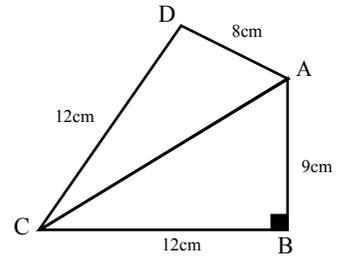
$$m(\angle B) = 90^\circ, AB = 9\text{cm}$$

$$BC = 12\text{ cm}, CD = 17\text{ cm}$$

$$\text{And } AD = 8\text{ cm}$$

1) Find the length of \overline{AC}

2) Prove that: $m(\angle DAC) = 90^\circ$



Giza

10

Dokki Directorate - Gamal Abd El-Nasser Exp.L.S.

1 Choose the correct answer from the given ones:

- The number of medians of an obtuse angled triangle is
 a) zero b) 1 c) 2 d) 3
- In a parallelogram ABCD if $m(\angle A) = 70^\circ$, then $m(\angle B) =$
 a) 70° b) 90° c) 110° d) 20°
- ΔABC : if $m(\angle A) = 30^\circ$, $m(\angle B) = 90^\circ$, then $BC =$
 a) $\frac{1}{2} AB$ b) $\frac{1}{2} AC$ c) $2AB$ d) $2AC$
- Each of the base angles of the isosceles triangle is angle.
 a) acute b) right c) obtuse d) straight
- ΔABC : $m(\angle B) = 70^\circ$, $m(\angle C) = 30^\circ$ then
 a) $BC > AB$ b) $AB > BC$ c) $AC > BC$ d) $AB > AC$

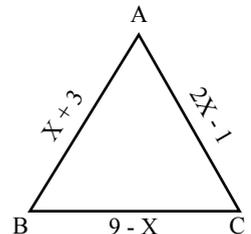
2 Complete:

- The perpendicular to a line segment from its mid-point is called for that line segment.
- The median of an isosceles triangle drawn from the vertex bisects
- ΔABC , if $AB = 5\text{ cm}$ and $BC = 7\text{ cm}$, then $AC \in].....,.....[$
- The longest side in the right angled triangle is
- ΔABC : $m(\angle B) = 40^\circ$, $m(\angle C) = 80^\circ$ then the number of axes of symmetry of $\Delta ABC =$

3 A- In the opposite figure:

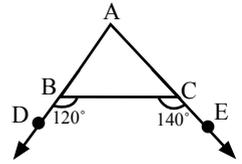
$$\Delta ABC, \text{ in which } m(\angle B) = m(\angle C)$$

Find: The perimeter of ΔABC .



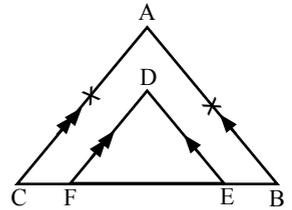
B- In the opposite figure:

$m(\angle DBC) = 120^\circ$
 $, m(\angle ECB) = 140^\circ$
 Prove that $CB > AB$



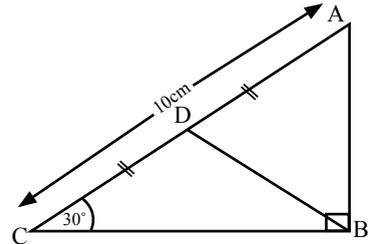
4 In the opposite figure:

$AB = AC, \overline{BE} \parallel \overline{AB}$
 $, \overline{DF} \parallel \overline{AC}$
 Prove that $DE = DF$



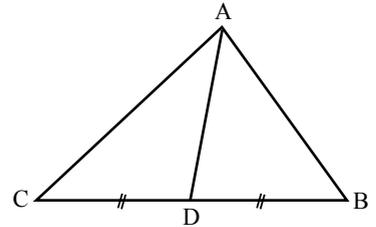
5 A- In the opposite figure:

ΔABC in which: $m(\angle B) = 90^\circ$
 $, m(\angle C) = 30^\circ, D$ is the mid-point of \overline{AC}
 $, AC = 10\text{cm}$. Find the perimeter of ΔABD
 Prove that $m(\angle B) > m(\angle C)$



B- In the opposite figure:

Perimeter of $\angle ADC >$ perimeter of ΔADB
 $, BD = DC$
 Prove that $m(\angle B) > m(\angle C)$



1 Complete the following:

- The vertex angle bisector in the isosceles triangle
- \overline{AD} is a median of ΔABC , M is the point of concurrence, then $AM:AD = \dots : \dots$
- Any point on the axis of symmetry of a line segment is at two equal distances from.....
- In any triangle: The sum of the lengths of any two sides is the length of the third side.
- ABCD is a parallelogram, $m(\angle A) = (3x + 4)^\circ$, $m(\angle B) = 5x^\circ$, then $m(\angle C) = \dots^\circ$

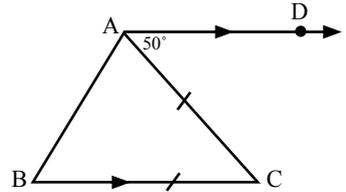
2 Choose the correct answer from the given ones:

- ABC is a triangle in which: $AB = 3\text{cm}, BC = 5\text{cm}$, then $AC \in \dots$
 $(]2, 8[, [2, 8] ,]9, 25[, [2, 15])$

- b) Triangle ABC in which $AB > AC$, then $m(\angle B) \dots\dots\dots m(\angle C)$ [$>$, $<$, \geq , $=$]
- c) An isosceles triangle the lengths of two sides: 4 cm and 8 cm, then the length of the third side iscm. (3, 4, 13, 8)
- d) $\triangle ABC$, $AB = AC$, $m(\angle B) = (2x + 13)^\circ$, $m(\angle C) = (3x - 17)^\circ$, then $m(\angle A) = \dots\dots\dots^\circ$ ($34^\circ, 43^\circ, 73^\circ, 30^\circ$)
- e) $\triangle ABC$: if $m(\angle A) = 30^\circ$, $m(\angle B) = 90^\circ$, then $BC = \dots\dots\dots$ ($\frac{1}{2} AB$, $\frac{1}{2} AC$, $2AB$, $2AC$)

3 A- In the opposite figure $\overrightarrow{DA} \parallel \overrightarrow{BC}$, $AC = BC$, $m(\angle DAC) = 50^\circ$

Find: $m(\angle ABC)$.



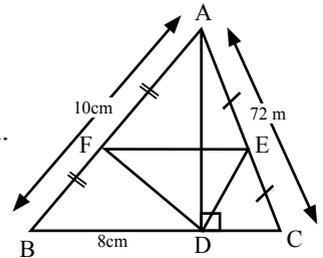
B- ABCD is a quadrilateral in which, $AB = 6$ cm. $BC = 4$ cm, $CD = 8$ cm, $DA = 7$ cm

Prove that: $m(\angle ABC) > m(\angle ADC)$.

4 In the opposite figure E, F are the midpoints of \overline{AB} , \overline{AC}

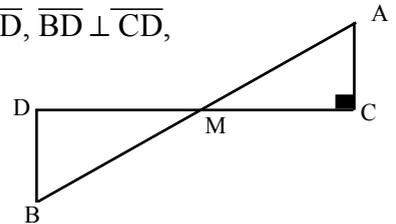
in $\triangle ABC$, $\overline{AD} \perp \overline{BC}$, $AB = 10$ cm, $BC = 8$ cm, $AC = 7$ cm.

Find: the perimeter of triangle DEF



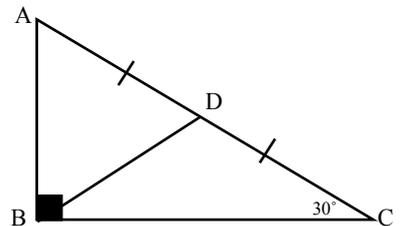
5 a) In the opposite figure $\overline{AB} \cap \overline{CD} = \{M\}$, $\overline{AC} \perp \overline{CD}$, $\overline{BD} \perp \overline{CD}$,

Prove that $AB > CD$



b) In the opposite figure \overline{BD} is the median of the right angled triangle ABC, $AC = 6$ cm, $m(\angle C) = 30^\circ$

Prove that $\triangle ABD$ is an equilateral triangle and find its perimeter.



1 Complete:

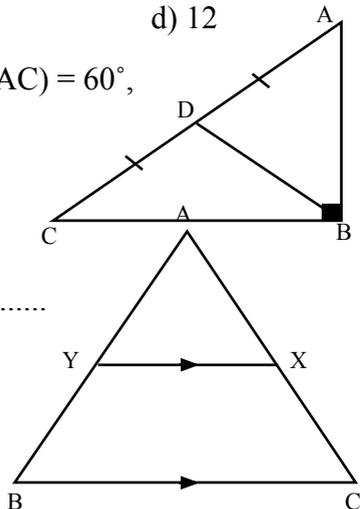
- 1) In any triangle the greatest angle in measure is opposite to
- 2) The number of axes of symmetry in the isosceles triangle =
- 3) The intersection point of the medians of a triangle divides each other from direction of the base in the ratio:
- 4) The medians of an isosceles triangle from the vertex angle
- 5) If the length of two sides in an isosceles triangle are 3cm and 7cm then the length of the third side =

2 Choose the correct answer:

- 1) ΔABC if $m(\angle B) = 70^\circ$, $m(\angle C) = 60^\circ$ then BC AB
 - a) $<$
 - b) $>$
 - c) \leq
 - d) \geq
- 2) The sum of lengths of any two sides in a triangle is the length of the third side.
 - a) $<$
 - b) $>$
 - c) \leq
 - d) \geq
- 3) In the right-angled triangle, the length of the median from the vertex of the right angle = the length of the hypotenuse.
 - a) $\frac{1}{3}$
 - b) $\frac{1}{2}$
 - c) $\frac{1}{4}$
 - d) 2
- 4) In ΔABC : if $AD = 9$ cm is a median and M is the point of concurrency, then $DM =$ cm.
 - a) 6
 - b) 3
 - c) 4.5
 - d) 4
- 5) In ΔABC is the right-angled triangle at B $m(\angle A) = 30^\circ$ and $BC = 4$ cm then $AC =$ cm.
 - a) 4
 - b) 8
 - c) 2
 - d) 12

- 3 In the opposite figure:** ΔABC , $AC = 8$ cm, $m(\angle BAC) = 60^\circ$, $m(\angle ABC) = 90^\circ$, D is the midpoint of \overline{AC} .

Find: the perimeter of ΔABD



4 Complete:

- a) The base angles of the isosceles triangle are
- b) In the opposite figure: ABC is a triangle in which $AB = AC$, $\overline{XY} \parallel \overline{BC}$
Prove that AXY is an isosceles triangle.

5 Complete:

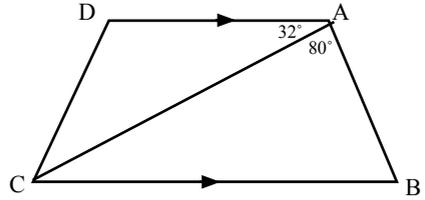
a) In a triangle, if two sides have unequal lengths,

b) In the opposite figure $\overline{AD} \parallel \overline{BC}$,

$m(\angle BAC) = 80^\circ$, $m(\angle CAD) = 32^\circ$

Prove that:

$BC > AB$



Answer the following questions:

1 Choose the correct answer from the given ones:

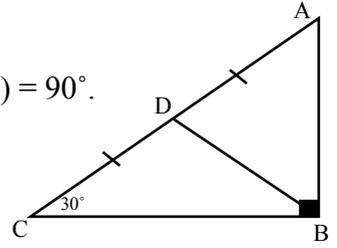
- 1) Number of axes of symmetry of the equilateral triangle =
 - a) 1
 - b) 2
 - c) 3
 - d) 4
- 2) The base angles of the isosceles triangle are
 - a) congruent
 - b) alternate
 - c) corresponding
 - d) supplementary
- 3) The length of the side opposite to the angle whose measure is 30° in the right-angled triangle = the length of the hypotenuse .
 - a) quarter
 - b) half
 - c) third
 - d) twice
- 4) In the triangle ABC, if $m(\angle B) = 90^\circ$, then the greatest side is
 - a) \overline{AB}
 - b) \overline{BC}
 - c) \overline{AC}
 - d) \overline{XY}
- 5) In the triangle ABC, if $BC = 9$ cm = 7 cm, then $m(\angle C)$ $m(\angle A)$
 - a) =
 - b) \geq
 - c) $>$
 - d) $<$

2 Complete each of the following:

- a) The medians of any triangle intersect at
- b) Any point on the axis of the line segment is from its terminals.
- c) The length of the median from the vertex of the right angle in the right-angled in the right-angled triangle equals
- d) In any triangle, if two angles are unequal in measure, then the greater angle is opposite to
- e) The measure of the exterior angle of the equilateral triangle =

3 In the opposite figure:

$AC = 8$ cm, D is mid of \overline{AC} , $m(\angle C) = 30^\circ$ and $m(\angle B) = 90^\circ$.
Find the perimeter of the triangle ABD.



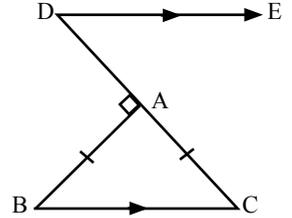
4 a) ABC is a triangle in which $m(\angle A) = 50^\circ$ and $m(\angle C) = 80^\circ$.

Prove that the triangle ABC is an isosceles triangle.

b) In the opposite figure:

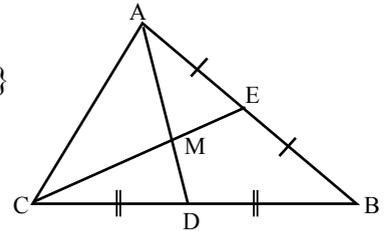
$\overline{BA} \perp \overline{CD}$, $\overline{BC} \parallel \overline{DE}$

$AB = AC$. Find $m(\angle CDE)$.



5 a) In the opposite figure:

E is mid of \overline{AB} . D is mid of \overline{BC} , $\overline{AD} \cap \overline{CE} = \{M\}$
 $MC = 5$ cm. and $MD = 2$ cm.
Find the length of each of \overline{AD} and \overline{ME}

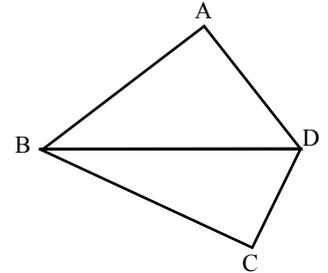


b) In the opposite figure:

$AB = 7$ cm , $BC = 8$ cm.,

$AD = 5$ cm. and $DC = 3$ cm.

Prove that: $m(\angle ADC) > m(\angle ABC)$



1 Complete:

1) The bisector of vertex angle of isosceles triangle is

2) In $\triangle XYZ$: if $m(\angle X) = 75^\circ$, $m(\angle y) = 25^\circ$ then the longest side in length is

3) If the point $D \in$ the axis of symmetry of \overline{BC} .

Then $DB =$

4) If ABC is a right angled triangle at B, and $AB = \frac{1}{2} AC$

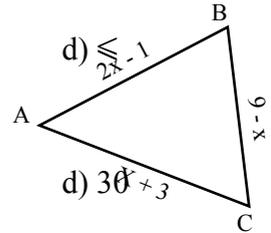
Then $m(\angle A) =$

5) XYZ is a triangle, if $XY = 3$ cm, $YZ = 5$ cm

then $XZ \in].....,.....[$

2 Choose:

- The number of axes of symmetry in the equilateral triangle =
 a) 2 b) 1 c) 0 d) 3
- In ΔABC : If $AB = AC$, $m(\angle C) = 50^\circ$ then $m(\angle A) = \dots\dots\dots$
 a) 80° b) 40° c) 100° d) 50°
- The point of concurrence of the medians of the triangle divides each median in the ratio of from the vertex.
 a) 1 : 3 b) 3 : 1 c) 1 : 2 d) 2 : 1
- In ΔABC : If $BC > AB$, Then $m(\angle A) \dots\dots\dots m(\angle C)$
 a) = b) < c) >
- ABCD is a parallelogram, $AB = 3$ cm. $BC = 5$ cm,
 Then its perimeter =cm
 a) 8 b) 16 c) 15 d) 30^{x+3}



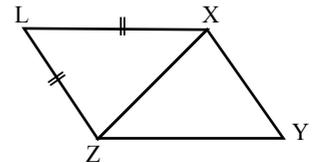
3 a) In the opposite figure:

ABC is a triangle, $m(\angle B) = m(\angle C)$
 Find the perimeter of the triangle ABC.

b) In the opposite figure:

$LX = LZ$, $YZ > YX$

Prove that: $m(\angle YXL) > m(\angle YZL)$



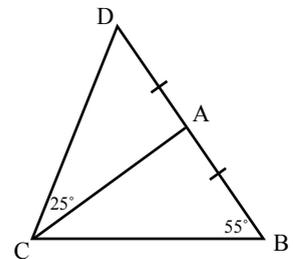
- 4 a) ABC is a triangle in which $AB = \frac{1}{2} BC = 3.5$ cm, and $AC = 8$ cm, Order the measure of its angles ascendingly.**

b) In the opposite figure:

$AB = AC$, $m(\angle ABC) = 55$

$m(\angle ACD) = 25$ and $D \in \overrightarrow{BA}$

Prove that: $AB > AD$



5 In the figure:

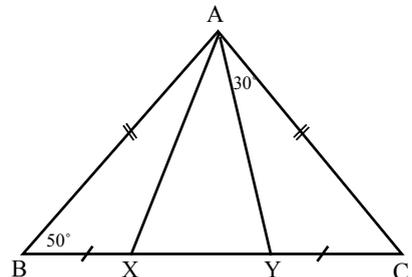
ABC is a triangle in which

$AB = AC$, $BX = CY$

If $m(\angle B) = 50^\circ$, $m(\angle CA Y) = 30^\circ$

Prove that: 1) ΔAYX is isosceles Δ

2) Find $m(\angle AXY)$



1 Complete:

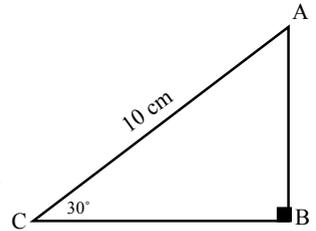
a) The point of intersection of the medians in a triangle divides each median by the ratio from the base.

b) The bisector of the vertex angle of an isosceles triangle is to the base and

ΔABC , $m(\angle B) = 90^\circ$, $m(\angle C) = 30^\circ$

if $AC = 10$ cm .Then $AB =$ cm

d) The longest side in the right-angled triangle is



e) The measure of the exterior angle of equilateral triangle =°

2 Choose the correct answer:

a) In a triangle ABC , if $AB = AC$ and $m(\angle A) = 40^\circ$

then $m(\angle C) =$ (40° , 70° , 140° , 50°)

b) If the lengths of two sides of triangle is 7 , 12 cm,

then the third side is (7 , 5 , 4 , 3)

c) In ΔABC : If $m(\angle B) = 70^\circ$, $m(\angle A) = 50^\circ$ then AB BC

(> , < , = , \equiv)

d) In the ΔXYZ , if $XY > ZX$, then $m(\angle Y)$ $m(\angle Z)$

(> , < , = , \equiv)

e) The number of axes of symmetry of isosceles triangle is°

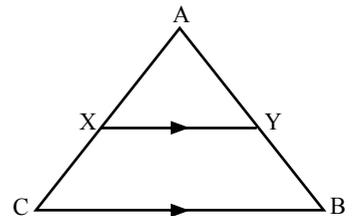
(1 , 0 , 3 , 4)

3 In the opposite figure:

ABC is a triangle in which $AB = AC$

$\overline{XY} \parallel \overline{BC}$, prove that

ΔAXY is an isosceles triangle



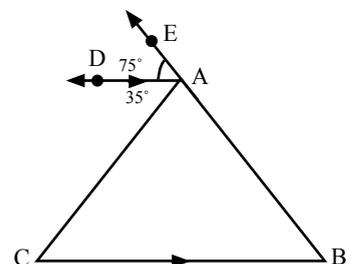
4 a) In the opposite figure:

ABC is a triangle, $E \in \overrightarrow{BA}$

$\overline{AD} \parallel \overline{BC}$, $m(\angle CAD) = 35^\circ$

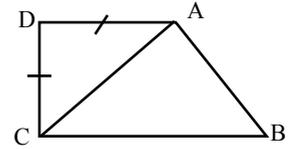
$m(\angle DAE) = 75^\circ$

Prove that $AC > AB$



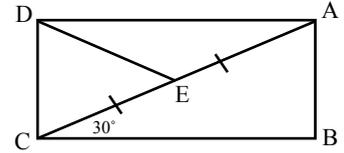
b) In the opposite figure:

ABCD is a quadrilateral
in which $AD = DC$, $BC > AB$
 $m(\angle BAD) > m(\angle CAD)$



5 a) In the opposite figure:

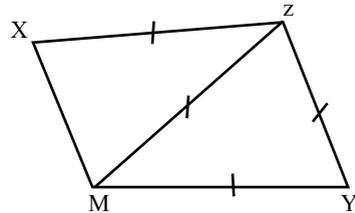
$m(\angle ABC) = m(\angle ADC) = 90^\circ$
 $m(\angle ACB) = 30^\circ$ and
 \overline{DE} is a median of $\triangle ADC$,
 $\overline{AB} = 3$ cm



Find, the length of \overline{DE}

b) In the opposite figure:

$ZY = YM = MZ = ZX$
 $m(\angle ZMX) = 50^\circ$
Find $m(\angle YZX)$

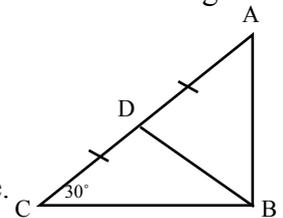


1 Choose the correct answer:

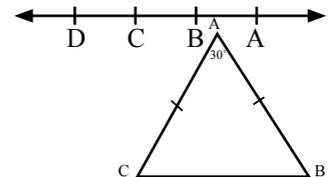
a) The number of axis of symmetry of isosceles triangle
(0, 1, 2, 3)

b) If the length of two sides of an isosceles triangle 3cm, 7 cm then the length of the third side = cm.
(3, 4, 7, 10)

c) In the opposite figure ABC is right angled triangle at B, \overline{BD} is median $m(\angle C) = 30^\circ$ then $\triangle ABD$ is triangle.
(equilateral, isosceles, scalene, right angled)



d) In the opposite figure
 $C, D \in \overleftrightarrow{AB}$ if $AB > CD$ then AC BD .
($>$, $<$, $=$, \equiv)



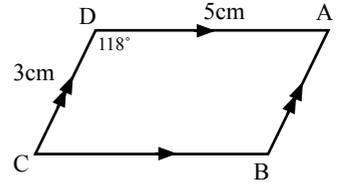
e) In the opposite figure $\triangle ABC$, $AB = AC$
 $m(\angle A) = 50^\circ$ then $m(\angle B)$
(50° , 130° , 65° , 60°)

2 Complete to form a correct statement:

- a) The measure of an exterior angle of an equilateral triangle =°
- b) The point of median of triangle divides each median in ratio from base.
- c) Triangle A B C in which A B = 3cm, B C = 5 cm then A C ∈].....‘.....[.
- d) In a triangle the smallest angle in measure opposite
- e) If the measurement of an angle in the isosceles triangle is 100° then the measurement of an angle of other two angles =

3 In the opposite figure A B C D is parallelogram find in proof.

- 1) m (∠A)
- 2) Perimeter of the A B C D.



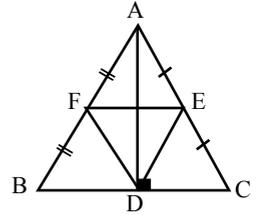
4 a) ABC is a triangle in which m (∠A) = 40°, m (∠B) = 75° order the lengths of sides of Δ ABC in ascending order.:

b) In the opposite figure:

ABC is triangle in which AB = 16cm,
AC = 18cm, BC = 20cm,

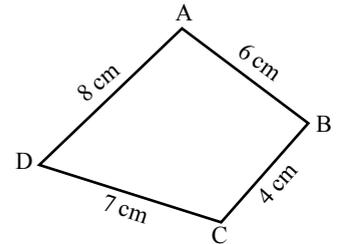
E is midpoint \overline{AC} , F is midpoint \overline{AB}

and $\overline{AD} \perp \overline{BC}$ find the perimeter of Δ DEF.



5 a) In the opposite figure:

ABCD is quadrilateral in which
AB = 6cm, BC = 4 cm, CD = 7cm
, DA = 8 cm prove that
m (∠BCD) > m (∠BAD)

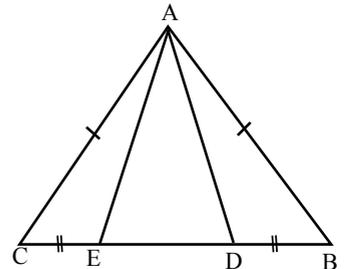


b) In the opposite figure:

ABC is an isosceles triangle in which BD = EC

AB = AC, D ∈ \overline{BC} , E ∈ \overline{BC} prove that

- 1) Δ ADE is isosceles,
- 2) ∠ADE ≅ ∠AED

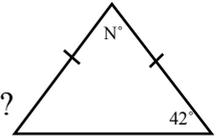


1 Choose the correct answer:

- 1) The point of concurrence of the medians of the triangle divides each median in the ratio of from its base.
 - a) 2 : 1
 - b) 1 : 2
 - c) 2 : 3
 - d) 3 : 2

2) In the opposite figure $N^\circ = \dots\dots\dots$

- a) 42 b) 48 c) 138 d) 96



3) Which of the following groups are valid in drawing a triangle?

- a) 5 cm, 7 cm, 8 cm b) 4 cm, 9 cm, 3 cm
 c) 10 cm, 6 cm, 4cm d) 8 cm, 3 cm, 4 cm

4) The length of the side opposite to the angle of measure $\dots\dots\dots^\circ$ in the right-angled triangle equals half the length of the hypotenuse.

- a) 30 b) 40 c) 60 d) 45

5) If the triangle is equilateral, then it is equiangular where each angle of measure = $\dots\dots\dots^\circ$

- a) 30 b) 45 c) 60 d) 90

2 Complete:

- 1) In the right-angled triangle, the $\dots\dots\dots$ is the longest side.
- 2) The medians of a triangle intersect in $\dots\dots\dots$.
- 3) If: $x > y$, z is a positive number then: $xz > \dots\dots\dots$
- 4) The interval which the third side of a triangle belongs to if the lengths of the other two sides were 6 cm, 9 cm is $\dots\dots\dots$.
- 5) The number of symmetrical axes in the equilateral triangle is $\dots\dots\dots$.

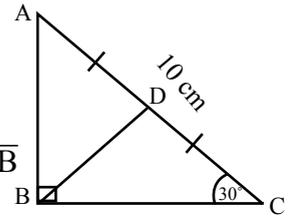
3 A) In the opposite figure:

ABC is a right-angled triangle is B,

D is a midpoint of \overline{AC} , $m(\angle C) = 30^\circ$, $AC = 10$ cm

Find: 1) the length of \overline{BD} 2) the length of \overline{AB}

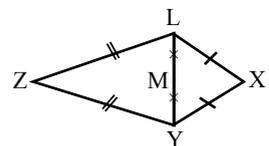
3) the perimeter of $\triangle ABD$



b) In the opposite figure:

$XY = XL$, $ZY = ZL$, $LM = YM$

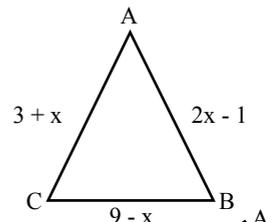
Prove that X, M and Z are on the same straight line



4 A) In the opposite figure:

ABC is a triangle which $m(\angle B) = m(\angle C)$

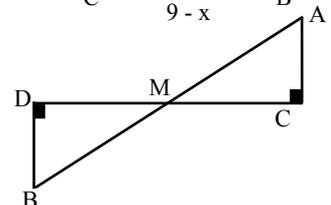
Find: the perimeter of the triangle.



b) In the opposite figure:

$\overline{AB} \cap \overline{CD} = \{M\}$, $\overline{AC} \perp \overline{CD}$, $\overline{BD} \perp \overline{CD}$

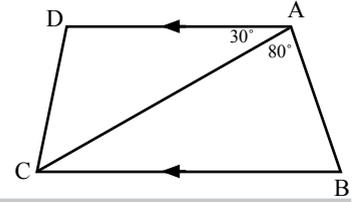
Prove that: $AB > CD$



5 In the opposite figure:

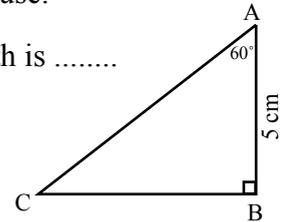
$\overrightarrow{AD} \parallel \overrightarrow{BC}$, $m(\angle BAC) = 80^\circ$, $m(\angle DAC) = 30^\circ$.

Prove that: $BC > AB$



1 Complete:

- a) The base angles of an isosceles triangle are
- 2) The number of the axes of symmetry in an equilateral triangle is
- 3) In the right-angled triangle the length of the median from the vertex of the right angle equals the length of the hypotenuse.
- 4) In $\triangle ABC$, if $m(\angle A) = 100^\circ$ then the greatest side length is
- 5) By using the opposite figure $AC = \dots\dots\dots$ cm



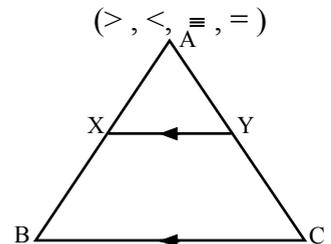
2 Choose the correct answer:

- 1) The intersection point of the medians of a triangle divides each of them at the ratio : from the base. (1 : 2 , 2 : 1 , 1 : 4 , 1 : 3)
- 2) In The isosceles triangle if the measure of one of the two base angles = 50° then the measure of the vertex angle = (50° , 100° , 80° , 130°)
- 3) The length of two sides of an isosceles triangle are 4 cm, 9 cm then the length of the third side =cm (4,8,7,9)
- 4) The measure of the exterior angle of an equilateral triangle = (60° , 80° , 120° , 130°)
- 5) ABC is a triangle in which $m(\angle B) = 70^\circ$, $m(\angle C) = 50^\circ$ then $AC \dots\dots\dots$ AB. (> , < , = , =)

3 In the opposite figure:

ABC is a triangle where $AB > AC$, $\overline{XY} \parallel \overline{BC}$

Prove that: $m(\angle AYX) > m(\angle AXY)$



4 a) In the opposite figure:

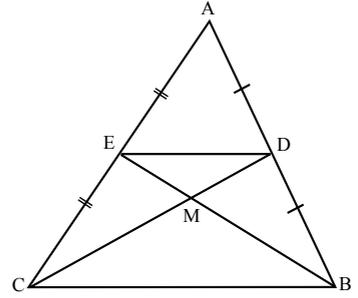
If D is the midpoint of \overline{AB} .

E is the midpoint of \overline{AC}

and $\overline{BE} \cap \overline{DC} = \{M\}$

If $DE = 4$ cm, $DM = 3$ cm and $ME = 2$ cm

Find the perimeter of $\triangle BMC$.

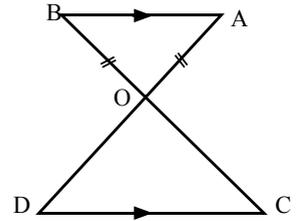


b) In the opposite figure:

$\overline{AB} \parallel \overline{DC}$, $\overline{AD} \cap \overline{BC} = \{O\}$

and $OA = OB$

Prove that: $\triangle ODC$ is an isosceles triangle.



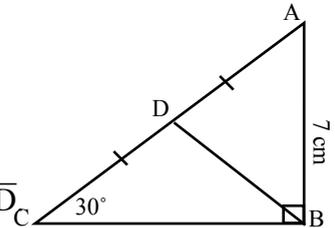
5 a) In the opposite figure:

ABC is a right angled triangle at B.

D is a midpoint of \overline{AC}

$m(\angle C) = 30^\circ$, $AB = 7$ cm

Find with proof: 1) length of \overline{AC} . 2) length of \overline{BD}



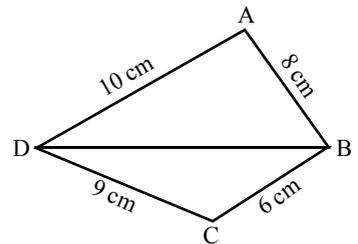
b) In the opposite figure:

ABCD is a quadrilateral in which

$AB = 8$ cm, $BC = 6$ cm

$CD = 9$ cm and $DA = 10$ cm

Prove that: $m(\angle ABC) > m(\angle ADC)$.

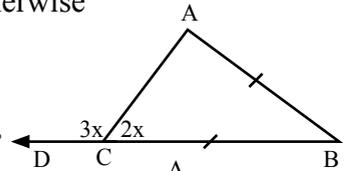


1 Complete:

- 1) $\triangle ABC$ in which $AB = 3$ cm, $BC = 5$ cm, then $AC \in].....,[$
- 2) The two base angles of the isosceles triangle are
- 3) The side opposite to the angle of measure 30° in the right angled triangle equals the hypotenuse.
- 4) The bisector of the vertex angle in an isosceles triangle of
- 5) If the point A lies on the axis of symmetry of \overline{xy} , then :

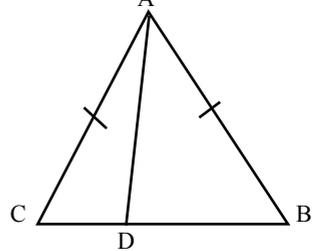
2 Choose the correct answer:

- 1) In $\triangle ABC$, If $BC > AB$, then $m(\angle A)$ $m(\angle C)$
 - a) $>$
 - b) $<$
 - c) $=$
 - d) \geq
- 2) The medians of the triangle intersect at one point ,this point divides each in the ratio from the base.
 - a) $2 : 1$
 - b) $1 : 2$
 - c) $3 : 4$
 - d) $1 : 1$
- 3) In isosceles triangle if one of its angles is 60° , then it has axes of symmetry.
 - a) 1
 - b) 2
 - c) 3
 - d) an infinite
- 4) In $\triangle ABC$, then $AB + AC - BC >$
 - a) 2
 - b) 1
 - c) zero
 - d) otherwise
- 5) In the opposite figure:
If $D \in \overrightarrow{BC}$, $\overline{AB} = \overline{BC}$, then $m(\angle B) =$ $^\circ$
 - a) 36°
 - b) 72°
 - c) 180°
 - d) 50°



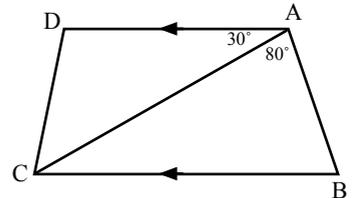
3 In the opposite figure:

ABC is isosceles triangle, $AB = AC$, $D \in \overline{BC}$
Then prove that: $AB > AD$



4 a) In the opposite figure:

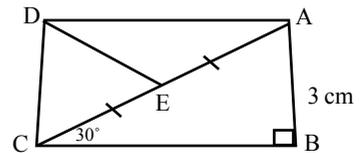
$\overline{AD} \parallel \overline{BC}$, $m(\angle DAC) = 30^\circ$, $m(\angle BAC) = 80^\circ$
Then prove that: $BC > AB$



b) In the opposite figure:

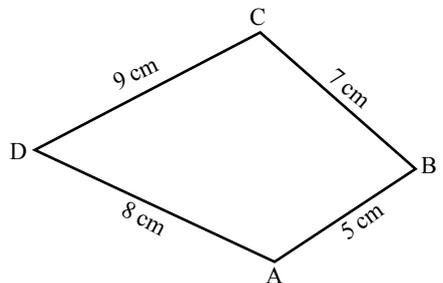
Complete:

- 1) $AC =$ cm
- 2) $DE =$ cm



5 a) In the opposite figure:

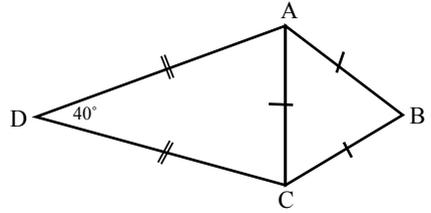
$AB = 5$ cm, $BC = 7$ cm, $CD = 9$ cm
And $AD = 8$ cm, then
Prove that: $m(\angle BAD) > m(\angle BCD)$



b) In the opposite figure:

$$AB = BC = AC, m(\angle D) = 40^\circ$$

And $AD = DC$, then find $m(\angle BCD)$



1 Choose the correct answer:

- 1) The numbers 7 , 3 and can be lengths of sides of an isosceles triangle.
 - a) 3
 - b) 7
 - c) 8
 - d) 4
- 2) The number of axes of symmetry of the equilateral triangle is
 - a) 1
 - b) 2
 - c) 3
 - d) zero
- 3) In $\triangle ABC$: if $m(\angle A) = 70^\circ$, $m(\angle B) = 50^\circ$, then AB BC .
 - a) $>$
 - b) $<$
 - c) \leq
 - d) $=$
- 4) In $\triangle XYZ$: if $XY = ZY$ $m(\angle Y) = 80^\circ$, then $m(\angle X) =$
 - a) 80°
 - b) 50°
 - c) 100°
 - d) 40°
- 5) If the length of median drawn from a vertex of triangle equals half the length of the opposite side to this vertex then the vertex angle is
 - a) acute
 - b) obtuse
 - c) right
 - d) reflex

2 Complete:

- 1) The longest side in the right-angled triangle is
- 2) The bisector of the vertex angle of the isosceles triangle and
- 3) In $\triangle ABC$: if $AB > AC$, then $m(\angle B)$ $m(\angle C)$.
- 4) In the right-angled triangle the length of the side opposite to angle with measure 30° equals the length of the hypotenuse.
- 5) The point of intersection of the medians of a triangle divides each median in the ratio from the vertex.

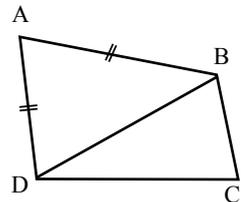
3 a) Draw the line segment \overline{AB} with length 7cm. Using a compass and the ruler to draw the axis of symmetry of \overline{AB} . "Don't remove the arcs"

b) In the opposite figure:

ABCD is a quadrilateral in which

$$AB = AD, DC > BC$$

Prove that: $m(\angle ABC) > m(\angle ADC)$

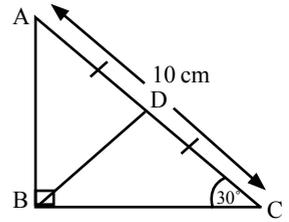


4 a) In the opposite figure:

ABC is a right-angled triangle at B, $m(\angle C) = 30^\circ$

D is a midpoint of \overline{AC} , $AC = 10$ cm.

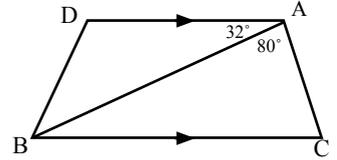
Find the length of \overline{AB} , \overline{BD}



b) In the opposite figure:

$\overline{AD} \parallel \overline{BC}$, $m(\angle BAC) = 80^\circ$, $m(\angle DAC) = 32^\circ$

Prove that: $BC > AB$

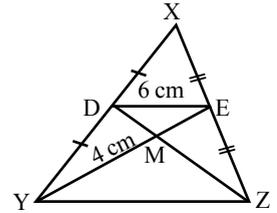


5 a) In the opposite figure:

D is the midpoint of \overline{XY} , E is the midpoint of \overline{XZ} ,

$\overline{YE} \cap \overline{ZD} = \{M\}$, $YE = 9$ cm, $DM = 4$ cm., $DE = 6$ cm.

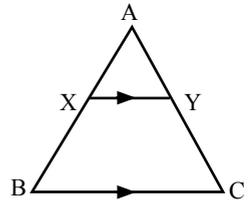
Find the perimeter of $\triangle YMZ$.



b) In the opposite figure:

$\overline{BC} \parallel \overline{XY}$, $AB = AC$

Prove that: $\triangle AXY$ is an isosceles triangle.



1 Choose the correct answer:

- 1) If the lengths of two sides in a triangle are 3 cm, 7 cm, then the length of the third side may be
 - a) 3
 - b) 4
 - c) 6
 - d) 10
- 2) The triangle ABC is obtuse-angled triangle at B, then the longest side is
 - a) AB
 - b) BC
 - c) AC
 - d) AD
- 3) In the isosceles triangle if one of its base angles is of measure 40° , then its vertex angles is of measure
 - a) 40°
 - b) 80°
 - c) 100°
 - d) 60°
- 4) The measure of exterior angle in an equilateral triangle
 - a) 60°
 - b) 70°
 - c) 80°
 - d) 120°

5) In a triangle ABC: $m(\angle B) = 75^\circ$, $m(\angle C) = 50^\circ$, then BC AB

- a) < b) > c) = d) \equiv

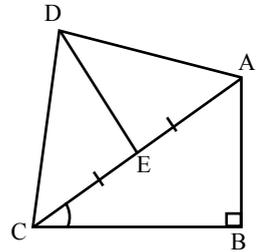
2) Complete the following:

- 1) The points of concurrence of the medians of the triangle divides each median in the ratio: from the base.
- 2) Any point at the axis of the line of symmetry is at two equal distances from
- 3) The length of side opposite to the angle whose measure = 30° in the right-angled triangle =
- 4) In the right-angled triangle the length of the median from the vertex of the right angle equal the length of the hypotenuse.
- 5) In triangle ABC, if $m(\angle A) = 70^\circ$, $m(\angle B) = 30^\circ$, then the longest side in length is

3) a) In the opposite figure:

ABCD is a quadrilateral,
 $m(\angle B) = m(\angle D) = 90^\circ$, $m(\angle ACB) = 30^\circ$,
 E is the midpoint of \overline{AC}

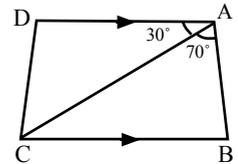
Prove that: $AB = DE$



b) In the opposite figure:

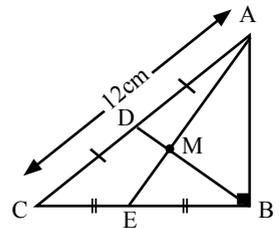
$m(\angle BAC) = 70^\circ$ and $m(\angle DAC) = 30^\circ$
 $\overline{AD} \parallel \overline{BC}$

Prove that: $AC > CB$



4) a) In the opposite figure:

ABC is a right-angled triangle at B,
 \overline{AE} and \overline{BD} are two medians of the triangle
 intersecting at M if $AC = 12\text{cm}$
 Calculate the length of each \overline{BD} and \overline{MD}

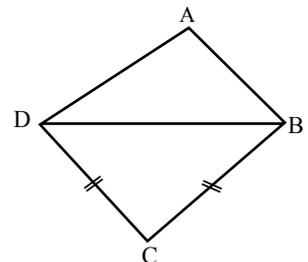


b) In the opposite figure:

ABCD is a quadrilateral in which:
 $AD > AB$ and $BC = CD$

Prove that:

$m(\angle ABC) > m(\angle ADC)$

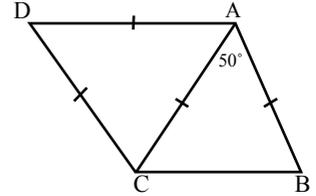


5 a) In the opposite figure:

$AB = AC = CD = DA$

, $m(\angle BAC) = 50^\circ$

Find: $m(\angle BCD)$



b) ΔABC which: $m(\angle A) = (5x + 2)^\circ$, $m(\angle B) = (6x - 10)^\circ$

, $m(\angle C) = (x + 20)^\circ$

Arrange the lengths of the side: of the triangle in an ascending order.

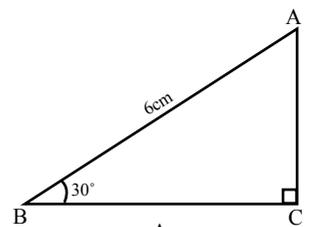
1 Complete:

- 1) The number of symmetrical axes in the equilateral triangle is
- 2) The base angles in an isosceles triangle are
- 3) If the length of two sides in an isosceles triangle were 3 cm, 7 cm then the length of the third side = cm.
- 4) Triangle ABC in which $AB = 3$ cm, $BC = 5$ cm, then $AC \in].....,.....[$
- 5) The longest side length in the right angled triangle is

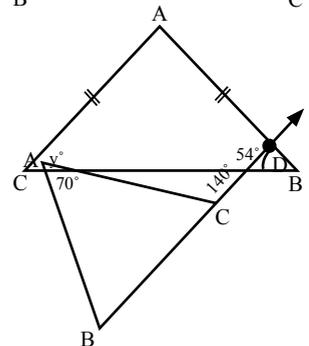
2 Choose:

- 1) In triangle ABC, if $m \angle A = 70^\circ$, $m \angle B = 30^\circ$, then the longest side in the length is is
(\overline{AB} , \overline{BC} , \overline{CA} , not given)
- 2) The intersecting point of medians of a triangle divides each other from the direction of the base in a ratio

- 3) In the opposite figure: $AC =$
(6 cm , 3 cm , 12 cm , 2 cm)



- 4) In the opposite figure:
 $Y^\circ =$
(54° , 126° , 63° , 180°)



- 5) In the opposite figure:
 $AC =$
(AB , CB , BD , CD) =

- 3 Line segment \overline{AB} which its length 6 cm, draw the straight line (L) the symmetry in the figure opposite:

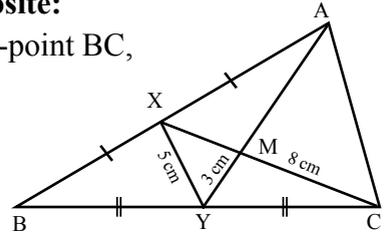
ABC is a triangle, X in a mid-point AB, Y in a mid-point BC,

$$XY = 5 \text{ cm} = \overline{XY} \cap \overline{AY} = \{M\}$$

Where $CM = 8 \text{ cm}$, $YM = 3 \text{ cm}$

Find: (1) The perimeter of triangle MXY

(2) The perimeter of triangle MAC



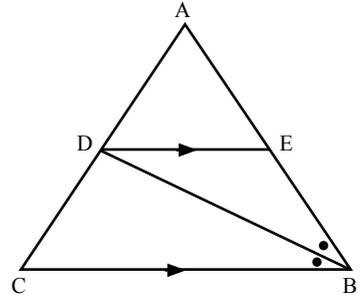
- 4 a) The bisector of the vertex angle in the isosceles triangle bisects the base and is

b) In the opposite figure:

\overline{BD} bisects $\angle ABC$ and intersects \overline{AC} at D,

$\overline{DE} \parallel \overline{BC}$ wherer $E \in \overline{AB}$

Prove: the triangle EBD is an isosceles triangle



- 5 a) The length of median draw from the vertex of the right angle in a triangle is equal

b) Triangle ABC in which $AB = 2.7 \text{ cm}$, $BC = 8.5 \text{ cm}$, $AC = 6 \text{ cm}$, Order the measure of angles of the triangle ascendingly.

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الناشر: دار نهضة مصر للنشر

المركز الرئيسي: 80 المنطقة الصناعية الرابعة - 6 أكتوبر
إدارة النشر: 21 ش أحمد عرابي - المهندسين ص.ب: 21 إمبابة
مركز التوزيع: 18 ش كامل صدقي - الفجالة - القاهرة ت: 25909827 - 25898085 - 02-25908895 فاكس: 02-25903395
فروع الإسكندرية: 35 شارع 45 - ميامي
فروع المنصورة: 30 شارع خالد بن الوليد - مدينة المهندسين - المنصورة.
ت: 38330287 - 38330289 - 02-38330296 فاكس:
ت: 33466434 - 02-33472864 فاكس:
ت: 03-5561732 فاكس: 03-5561736





الآن بجميع المكتبات

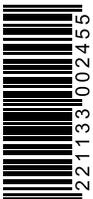
لجميع المواد فى المرحلة الإعدادية

فى حالة عدم تواجد الكتاب فى أقرب مكتبة، يرجى التواصل معنا من خلال الاتصال على:

16766



أرسل بياناتك مع امتحان المادة لتربح معنا نسخة مجانية فى الفصل الدراسى الثانى



6

اسم الطالب: المحمول:
العنوان: المحافظة:
البريد الإلكتروني: الهاتف:
المدرسة: الإدارة التعليمية:
اسم المدرس: هاتف المدرس:

برجاء الكتابة بخط واضح