

أسئلة استرشادية للصف الثاني الثانوي

رياضيات (١) للقسم العلمي باللغة الإنجليزية

Question (1):

$$\lim_{x \rightarrow 1} \frac{x^3 - 6x}{5x} = \dots$$

- A. -1
  - B.  $\frac{7}{5}$
  - C. zero
  - D. -5
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Question (2):

In  $\triangle ABC$  , if  $b = 5$  cm ,  $m(\angle B) = 30^\circ$  , then length of the diameter of the circumcircle of  $\triangle ABC$  equals ..... cm.

- A.  $\frac{10\sqrt{3}}{3}$
  - B. 2.5
  - C. 10
  - D.  $\frac{5\sqrt{3}}{2}$
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Question (3) :

If  $\lim_{h \rightarrow 0} \frac{(1 + 3h)^4 - 1}{h} = k$ , then  $k = \dots$

- A. 6
  - B. 4
  - C. 3
  - D. 12
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Question (4)

The rule which does not represent a function is .....

A.  $y = x^3 + 2$  ,  $x \in [1, 3[$

B.  $y = 2x$  ,  $x \in \mathbb{R}$

C.  $y = \begin{cases} 2x + 1 & , x \geq 2 \\ x^2 - 1 & , x \leq 2 \end{cases}$

D.  $y = \begin{cases} x + 1 & , x > 3 \\ 2x & , x \leq 3 \end{cases}$

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Question (5) :

In  $\triangle ABC$  , if  $a = 4$  cm ,  $m(\angle A) = 35^\circ$  ,  $m(\angle B) = 85^\circ$  , then the perimeter of  $\triangle ABC \simeq \dots\dots\dots$  cm.

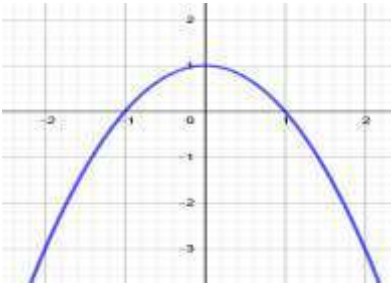
- A. 16
- B. 17
- C. 18
- D. 19

Question (6) :

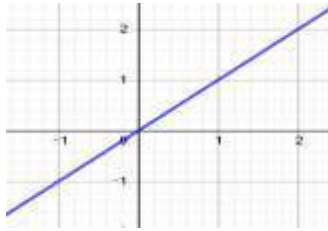
If  $f$  and  $g$  are two real functions where  $f(x) = x^2 - 4$  and  $g(x) = \sqrt{8 - x}$ , then determine the domain of the function  $\frac{g}{f}(x)$ .

Question (7) :

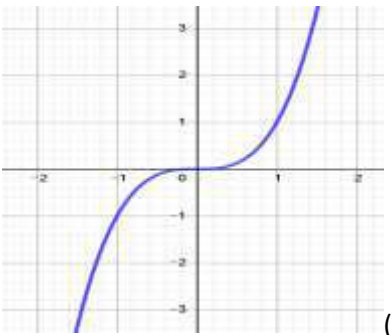
The graph which represents a cubic function is .....



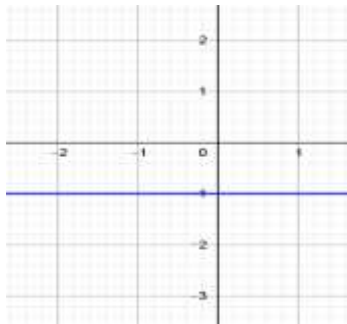
(A)



(B)



(C)



(D)

A. (B)

B. (A)

C. (C)

C. (D)

Question (8) :

The function f where  $f(x) = \begin{cases} 2 - x & , -2 \leq x \leq 1 \\ x & , 1 < x \leq 5 \end{cases}$

is .....

- A. decreasing on  $] -2 , 1[$
- B. decreasing on  $]1 , 5[$
- C. increasing on  $] -2 , 5[$
- D. increasing on  $] -2 , 1[$

Question (9) :

If  $f : \mathbb{R}^* \rightarrow \mathbb{R}$  where  $f(x) = \frac{1}{x} + 3$  , then f(x) is .....

- A. odd
  - B. even
  - C. not one-to-one
  - D. one-to-one
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Question (10) :

If the graph of the function  $f : f(x) = \log_{\frac{1}{2}} x$  passes through the point  $(512 , k)$ , then find the value of k.

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Question (11) :

Find  $\lim_{x \rightarrow 0} \frac{2\sin^2 x}{1 - \cos^4 x}$

Question (12) :

If ABCD is parallelogram, then  $\frac{AD}{\sin(\angle DBA)} = \dots\dots\dots$

A.  $\frac{BC}{\sin(\angle CBD)}$

B.  $\frac{AB}{\sin(\angle ABD)}$

C.  $\frac{DC}{\sin(\angle DBC)}$

D.  $\frac{\sin(\angle A)}{BD}$

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