CATEGORY 3 Sample Question

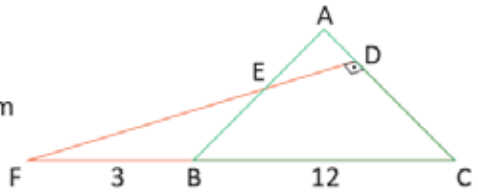
1.

Triangle ABC is equaliteral triangle.

$m(\hat{FDC}) = 90°$, $|FB| = 3$ cm

$|BC| = 12$ cm

Find the ratio $\frac{|AD|}{|AC|}$



A)¾ B) ⅜ C) ⅓ D) ¼

2. If $\frac{1}{x} + \frac{1}{y} = \frac{1}{z} - \frac{1}{y} = 10$ *then*

Find $\frac{1}{x^2} - \frac{2}{y^2} + \frac{1}{z^2}$

A) 200 B) 160 C) 100 D) 80

3. $A = \frac{\sqrt{x-24}+\sqrt[3]{x+3}}{\sqrt{24-x}+\sqrt[4]{x-8}}$ and $A \in R$. *Calculate* A.

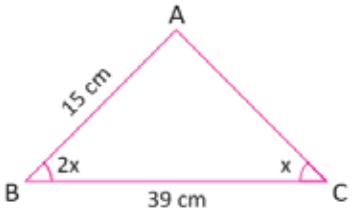
A) 1 B) 1.5 C) 2 D) -1

4.

$m(\hat{ABC}) = 2x$, $m(\hat{BCA}) = x$,

$|AB| = 15$ cm , $|BC| = 39$ cm

Find area of triangle ABC.



A) 58.5 B) 97.5 C) 136.5 D) 175.5

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5The roots of quadratic equation $x^2 - (m + 3)x + 2m + 5 = 0$ are slope of two parallel lines. Find the product of the values of variable m.

A) -11 B) -10 C) 11 D) 10

.

6.

ABC is defined like above.

$ABC = A + \frac{B}{C}$

673 + 2x6 is integer,find value of the digit x.

A) 1 B) 12 C) 15 D) 4

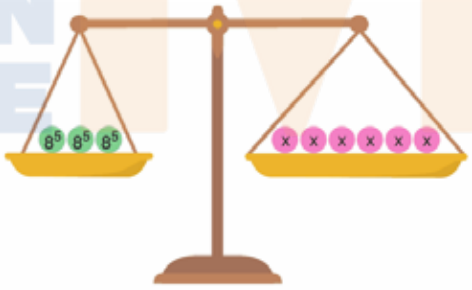
7. A number pattern is shown below.

7, 8 , 5 , 16 , 10 , 15 , 20 , 20 , 18 , 40, ... , ...

If the pattern continues , what numbers will come next?

A) 23 , 39 B) 23,32 C) 38 , 79 D) 48 , 80

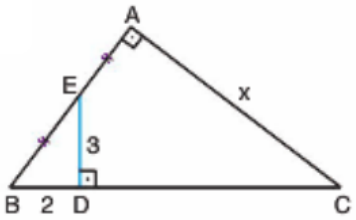
8.



If two pans are balanced,find the value of x.

$A) 2^{13}$ $B) 4^7$ $C) 8^4$ $D) 2^{11}$

9.



ABC is right triangle.

[AB] ⊥ [AC]

[ED] ⊥ [BC]

|BE| = |EA|

|BD| = 2

|EC| = 3

Find length of AC.

$A)\ 2\sqrt{30}$ $B)\ 3\sqrt{13}$ $C)\ 6\sqrt{3}$ $D)\ 7\sqrt{2}$

10. a and b are the solution of the x^2-6x+1=0 . Find the value of expression (a-1) (b+1) (a-5) (b-7).

A) – 40 B) - 32 C) 1 D) 40