

Eighth Intra School Mathematics Olympiad

2017

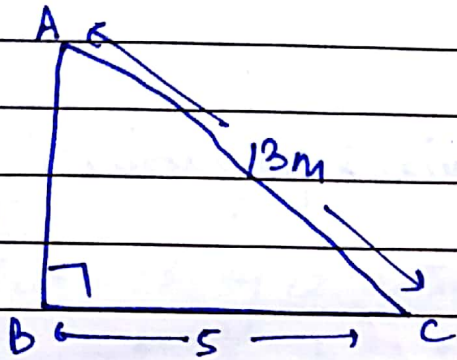
Class VII

Marking Scheme Section A

Q1. $\triangle PQR \cong \triangle SRQ$, (C) $PQ = SQ$

Q2. 92, (D) $\angle C \cong \angle D$

Q3.



Using Pythagoras theorem

$$AB^2 + BC^2 = AC^2$$

$$AB^2 + 5^2 = 13^2$$

$$AB^2 + 25 = 169$$

$$AB^2 = 169 - 25$$

$$AB^2 = 144 \Rightarrow \boxed{AB = 12m} \text{ (C)}$$

Q4. Original diving level = -100

Increased " " = -20

-120

Decreased diving level + 35

New diving level = -85m (B)

Q5. Total outcomes = 1, 2, 3, 4, 5, 6, 7, 8, 9 = 9

Favourable outcomes = 3, 6, 9 = 3

$$P(\text{Counter divisible by 3}) = \frac{\text{No. of favourable outcomes}}{\text{Total outcomes}}$$

$$= \frac{3}{9} = \boxed{\frac{1}{3}} \text{ (E)}$$

Q6. 14, 21, 28, 35, 42, 49, 56, 63, 70, 77, 84, 91, 98
No. of 2 digit whole No.s = 13 (E)

Q7. $2^6 = (2^3)^2$
 $\Rightarrow 2^6 = 8^2$ (B)

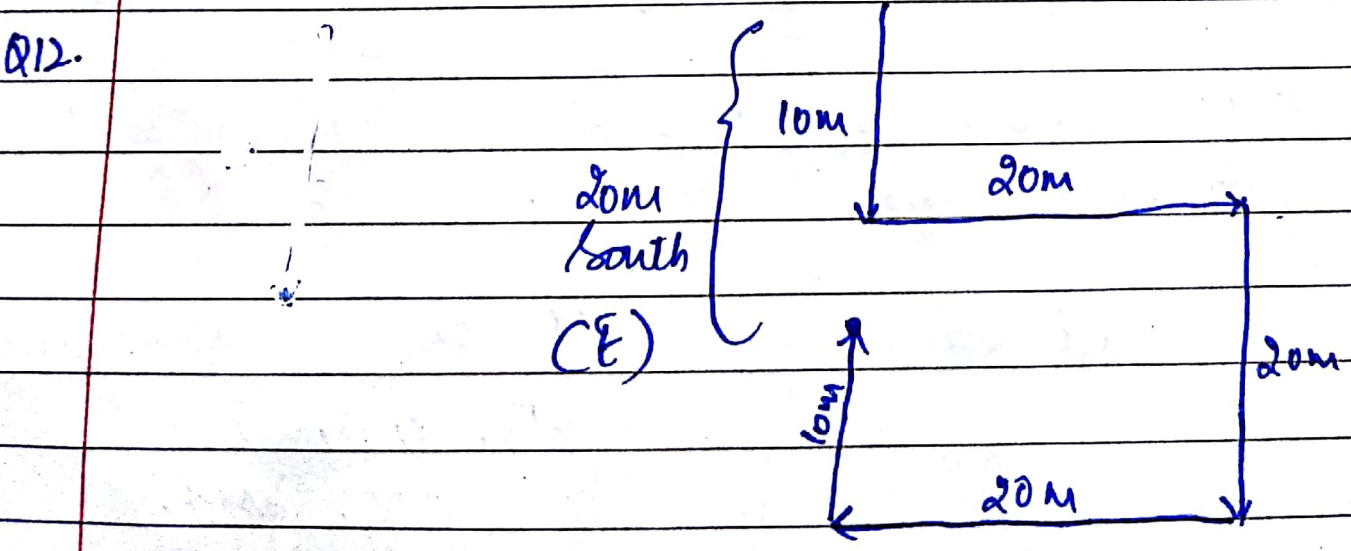
Q8.
$$\begin{array}{r} x^4 - 2xy + 2y^2 \\ -x^4 + xy + 2y^2 \\ \hline 4y^2 \end{array}$$

 $4y^2 \rightarrow$ Monomial & polynomial in y (A)

Q9. $2\pi r = 88$
 $r = \frac{88}{2\pi} \Rightarrow r = \frac{88 \times 7}{2 \times 22} = \boxed{14 \text{ cm}}$ (C)

Q10. $-35 \times 10^7 \neq -35 \times 7 + 10^7$ (C)
SECTION B

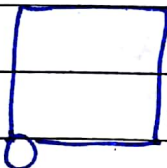
Q11. 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, ... 80
11th place = 55 (B)



Q13. RESCUE PROBLEM
372057 9348176

PROCURE
9340537 (A)

Q14. SELF RIGHTEOUSNESS
SENSUOETHINGIRFLES
T(E)

Q15.  (C)

Q16. Section C
Let CP of 12 articles = ₹x
⇒ " " 1 " = $\frac{x}{12}$

⇒ SP of 10 articles = ₹x
" " 1 " = $\frac{x}{10}$

$$\text{Gain} = \text{SP} - \text{CP} = \frac{x}{10} - \frac{x}{12}$$

$$= \frac{6x - 5x}{60} = \frac{x}{60}$$

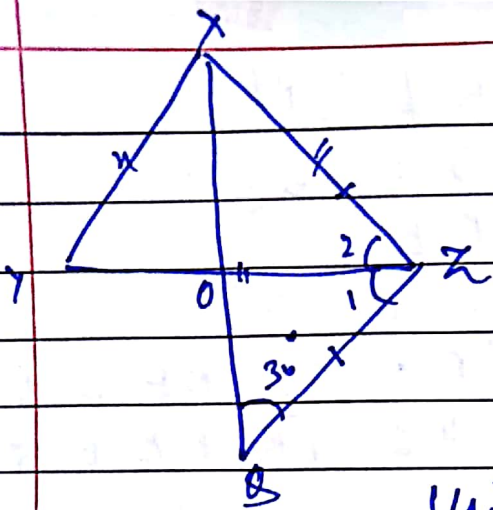
$$\text{Gain \%} = \frac{\frac{x}{60}}{\frac{x}{12}} \times 100 = \frac{x \times 12}{60 \times x} \times 100 = 20\% \text{ (C)}$$

Q17. Side of sq square = 1 + 4 = 5 cm

⇒ Area of shaded region = Area of square

$$\Rightarrow \text{Area} = (\text{side})^2 = (5^2) = 25 \text{ cm}^2 \text{ (D)}$$

Q18.



$\triangle XYZ$ is equilateral

$$\Rightarrow \angle XYZ = \angle XZY = \angle YXZ = 60^\circ$$

$\triangle XQZ$ is isosceles

$$\Rightarrow \angle QXZ = \angle XQZ = 30^\circ$$

Using A.S.P in $\triangle XQZ$

$$\angle XQZ + \angle QZQ + \angle ZQX = 180^\circ$$

$$30^\circ + \angle 1 + \angle 2 + 30^\circ = 180^\circ$$

$$60^\circ + \angle 1 + 60^\circ + \cancel{60^\circ} = 180^\circ$$

$$\angle 1 = 180 - 120 = 60^\circ$$

$$\Rightarrow \boxed{\angle QZQ = 60^\circ} \text{ (E)}$$

Q19.

Self = 1

Old Man = 1

Old Lady = 1

Two Couples = 4

One child each = 2

$$\underline{\underline{9}} \text{ (B)}$$

Q20.

$$35xy = 700$$

$$y = \frac{700}{35}$$

$$\boxed{y = 20}$$

$$35x = 20$$

$$\boxed{x = 4} \text{ (B)}$$

SECTION D

Q21.

let the fraction = $\frac{5x}{8x}$
A7Q

$$\Rightarrow 5x + 8x = 91$$

$$13x = 91$$

$$x = 7$$

$$5x = 35 \quad 8x = 56$$

$$\text{Difference} = 56 - 35 = \boxed{21} \text{ (A)}$$

Q22.

Value of coin Y = ₹2

" " " Z = $3 \times 2 = ₹6$

" " " X = $4 \times 2 = ₹8$

" " " W = ₹

Total value = 30

value of coin W = $30 - (8 + 6 + 2)$

$$= \boxed{₹14} \text{ (A)}$$

Q23.

Dist. above ground to be covered = 50m

" below " " " " = $3 \times 5 = 15m$

Total Dist = 65m

Speed = 1m/sec.

$$\text{Time} = \frac{\text{Dist.}}{\text{Speed}} = \frac{65}{1} = 65 \text{ sec} \text{ (B)}$$

Q24.

No. of marbles with Pankaj = 96

" " " Arun = 63

let Pankaj give 'x' marbles to Arun
A7Q

$$96 + x = 2(63 - x)$$

$$96 + x = 126 - 2x$$

$$3x = 30 \quad \boxed{x = 10} \text{ (D)}$$

Q5. $13 + \cancel{14} + 9 = \cancel{14} + x + 10$

$$22 = x + 10$$

$$22 - 10 = x$$

$$\underline{x = 12} \quad (E)$$