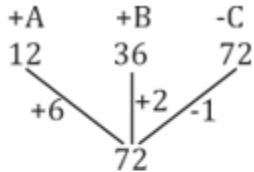


Quant Mega Quiz for SSC CHSL (Solutions)

S1. Ans.(b)

Sol.



$$T.W = 72$$

$$\text{Remaining work} = 72 - 42$$

$$\text{Remaining work done by (b+c)}$$

$$\therefore \frac{30}{1} = 30$$

S2. Ans.(c)

Sol.

$$\text{Loss}\% = \frac{xy}{100} = 1.21\%$$

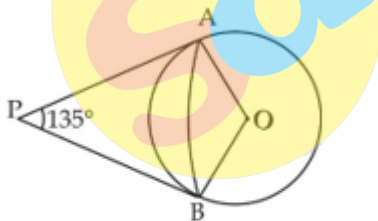
S3. Ans.(d)

Sol.

$$\frac{\frac{1}{4} + \frac{8}{4} - 1}{\frac{1}{8} + 3} = 0$$

S4. Ans.(c)

Sol.

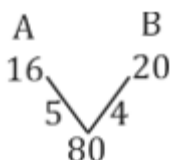


$$\because \angle OAB = \angle OBA$$

$$\angle OAB = \frac{180^\circ - 45^\circ}{2} = 67.5^\circ$$

S5. Ans.(c)

Sol.



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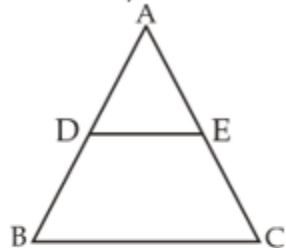
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One cycle work done (4+5) in two hours
 In 8 cycle work done = 9×8
 Remaining work $80 - 72 = 8$
 Remaining work 1st done by A in one hour = $8 - 4$
 Now remaining work done by B = $\frac{4}{5}$ hours
 Total time to complete the work
 $= 16 + 1 + \frac{4}{5} = 17 \frac{4}{5}$ hours

S6. Ans.(d)

Sol.

We have,



$AD = 3$ cm, $BD = 4$ cm
 & $AE = 4.4$ cm, $DE = 6$ cm
 Since, $\triangle ABC \sim \triangle ADE$
 $\therefore \frac{AD}{AB} = \frac{DE}{BC}$
 $\Rightarrow \frac{3}{7} = \frac{6}{BC} \Rightarrow BC = 14$ cm

S7. Ans.(b)

Sol.

We have

$$21.25\% = \frac{17}{80} \text{ \& } 36\% = \frac{9}{25}$$

Let third number = 400

\therefore 1st number = 485

& 2nd number = 544

$$\text{Required \%} = \frac{485}{544} \times 100 = 89.15\%$$

S8. Ans.(b)

Sol.

We have,

$$\frac{a}{b} = \frac{b}{c}$$

$$b^2 = ac$$

$$b^4 = a^2c^2 \text{equ. 1}$$

required $a^4:b^4$

$$= a^4 : a^2c^2$$

$$= a^2 : c^2$$

S9. Ans.(c)**Sol.**

Investment ratio = Profit ratio

(\because Time is constant)

1, 53,000: 1,95,000 = Profit ratio

Profit ratio = 153: 195

We have 153 unit = 17000

$$\therefore \text{Total profit} = 348 \text{ unit} = \frac{17000}{153} \times 348$$

= Rs 38666.67

S10. Ans.(a)**Sol.**

Average of 17 numbers = 69

Sum of 17 numbers = 1173

Sum of 4 removed numbers

$$= 68 + 57 + 71 + 85 = 281$$

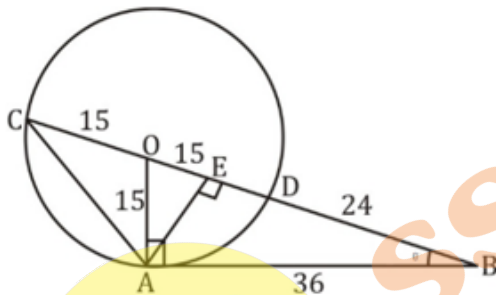
Sum of remaining 8 numbers

$$= 1173 - 281 = 892$$

$$\text{Average of 8 numbers} = \frac{892}{8} = 111.5$$

S11. Ans.(b)**Sol.**

OC = OD = OA = 15 cm = radius

In right angle ΔOAB

$$\sin \theta = \frac{15}{39}$$

Now, in right angle ΔAEB

$$\sin \theta = \frac{AE}{36}$$

$$\Rightarrow \frac{15}{39} = \frac{AE}{36} \Rightarrow AE = \frac{36 \times 15}{39}$$

$$\text{Now Area of } \Delta ABC = \frac{1}{2} \times 54 \times \frac{15 \times 36}{39} = 373.85 \text{ cm}^2$$

S12. Ans.(b)**Sol.**

$$= \frac{2}{\cot A - \tan A}$$

$$= \frac{\cos A}{\sin A} - \frac{\sin A}{\cos A}$$

$$= \frac{\cos^2 A - \sin^2 A}{\sin 2A}$$

$$= \frac{\cos 2A}{\sin 2A} = \cot 2A$$

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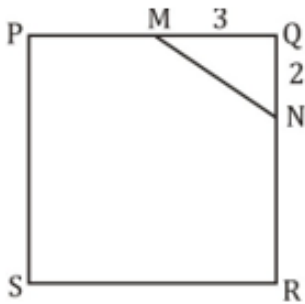


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S13. Ans.(c)

Sol.



Let side of the square be 6 units

Area of square = 36 sq units

\therefore Area of $\Delta MQN = \frac{1}{2} \times 2 \times 3 = 3$ sq units

Now, 3 sq. units $\rightarrow 27$ cm²

\therefore 36 sq. units $\rightarrow \frac{27}{3} \times 36 = 324$ cm²

\therefore Side of square = 18 cm

Diagonal of square = $18\sqrt{2}$ cm

S14. Ans.(b)

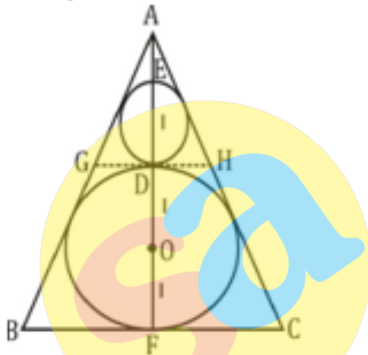
Sol.

Area of bigger circle = 5544

$\pi R^2 = 5544$

$R = 42$ cm

Now,



Since, ABC is an equilateral triangle

AF is the median and O is the centroid

$AD = OD = OF = 1$ unit

And ΔAGH and ΔABC will be similar

(when GH is drawn parallel to BC)

Hence ΔAGH is also an equilateral Δ .

Now, $AD = \frac{\sqrt{3}}{2} a = 42$

$\Rightarrow a = \frac{84}{\sqrt{3}}$

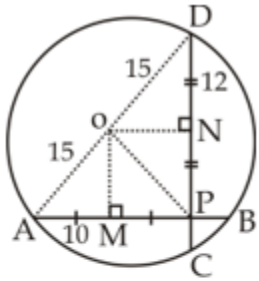
\therefore Inradius of ΔAGH , $r = \frac{a}{2\sqrt{3}} = \frac{84}{\sqrt{3} \times 2\sqrt{3}}$

$r = 14$

\therefore Area of smaller circle = $\pi r^2 = \frac{22}{7} \times 14 \times 14 = 616$ cm²

S15. Ans.(c)

Sol.



As we can see in the figure ONPM is a rectangle

Now,

$$OM = \sqrt{15^2 - 10^2} = 5\sqrt{5} \text{ cm} = NP$$

And

$$ON = \sqrt{15^2 - 12^2} = 9 \text{ cm} = MP$$

∴ Diagonal of rectangle ONPM

$$OP = \sqrt{9^2 + (5\sqrt{5})^2} = \sqrt{206} \text{ cm}$$

S16. Ans.(b)

Sol.



We know

$$PS \times PQ = PT \times PR$$

$$\Rightarrow 6 \times (6 + 4) = 5 \times (TR + 5)$$

$$\Rightarrow TR + 5 = \frac{6 \times 10}{5}$$

$$\Rightarrow TR = 7 \text{ cm}$$

The square value of TR = 49 cm

S17. Ans.(d)

Sol.

$$\sin^2(90 - \theta) - \left[\frac{(\sin(90 - \theta) \cdot \sin \theta)}{\tan \theta} \right] + \cos \theta$$

$$= \cos^2 \theta - \left[\frac{\cos \theta \cdot \sin \theta}{\sin \theta / \cos \theta} \right] + \cos \theta$$

$$= 0 + \cos \theta = \cos \theta$$

S18. Ans.(c)

Sol.

$$\text{Area of trapezium PQRS} = \frac{1}{2} \times$$

$$(\text{Sum of parallel sides}) \times \text{height}$$

$$= \frac{1}{2} \times (12 + 30) \times 9 = 189$$

$$2/3\text{th of the area} = 2/3 \times 189 = 126$$

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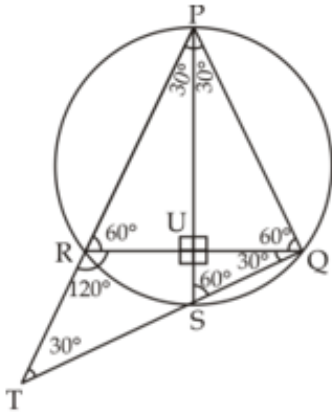
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S19. Ans.(b)

Sol.



Here, PS will be diameter of the circle

$$\therefore \angle PQS = 90^\circ$$

$$\therefore \angle PSQ = 180^\circ - (90^\circ + 30^\circ) = 60^\circ$$

Now in $\triangle RTQ$

$$\angle RTQ = \angle RQT = 30^\circ$$

$$\therefore RT = RQ$$

$$\text{i.e. } RT : RQ = 1 : 1$$

S20. Ans.(d)

Sol.

$$r_1/r_2 = 3/2$$

$$\text{or } r_1 = 3/2 * r_2$$

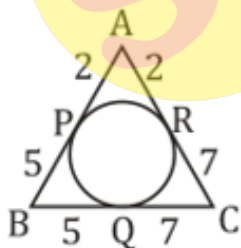
$$CSA_1/CSA_2 = 2\pi r_1 h_1 / 2\pi r_2 h_2 = 3/5$$

$$\text{So, } h_1/h_2 = 2/5$$

$$\Rightarrow \text{Volume}_1 / \text{Volume}_2 = \pi(r_1)^2 h_1 / \pi(r_2)^2 h_2 = 9/10$$

S21. Ans.(b)

Sol.



As we know,

$$AP = AR$$

$$BP = BQ$$

$$CQ = CR$$

$$AB = 7 \text{ cm } BC = 12 \text{ cm } AC = 9 \text{ cm}$$

$$\text{Area of } \Delta = \sqrt{14(7)(2)(5)} = 14\sqrt{5} \text{ cm}^2$$

S22. Ans.(a)

Sol.

Speed	Time
24	2
48	4
$-24 \uparrow 72$	$6 \downarrow +2$
96	8

∴ Original speed = 96 km/hr

$33\frac{1}{3}\%$ of original speed = $96 \times \frac{1}{3} = 32$ km/hr

S23. Ans.(b)

Sol.

A	B
3	5
5×2	6×2
10	12
) 7 — 14	
) 1 — 2	
Present Age's of A and B — $(3 \times 2) + 4$	$(5 \times 2) + 4$
10	14

Sum of present ages of A & B = 24.

S24. Ans.(c)

Sol.

CP	SP	P%
100	320	220
$\downarrow +25\%$		
125	320	156
		$\frac{64}{220} \times 100 = 29\%$

S25. Ans.(b)

Sol.

78y is divisible by 8, So y = 4

$$\frac{9+8+5+x+3+6+7+8+4}{9} = \frac{50+x}{9}$$

So x = 4

x + y = 8

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