

Solutions

S1. Ans.(a)

Sol. CP = $24 \times 48 = \text{rs } 1152$

$$\text{SP} = 8 \times 48 \times \frac{110}{100} + 16 \times 48 \times \frac{120}{100} = \text{Rs. } 1344$$

$$\text{Profit \%} = \frac{192}{1152} \times 100 = 16\frac{2}{3}\%$$

S2. Ans.(a)

Sol. Let SP of each car = Rs x

For Car 1

$$C = x \times \frac{100}{110} = \frac{10}{11}x$$

For Car 2

$$C = x \times \frac{100}{93} = \frac{100x}{93}$$

$$\text{Total C} = 100x \left[\frac{1}{110} + \frac{1}{93} \right] = \frac{203 \times 100x}{110 \times 93}$$

$$\text{Gain} = 2x - \frac{203 \times 100x}{110 \times 93} = \frac{(2 \times 110 \times 93 - 20300)x}{110 \times 93} = \frac{160x}{110 \times 93}$$

$$\text{Gain\%} = \frac{160x}{203x \times 100} \times 100 = \frac{160}{203}\%$$

S3. Ans.(c)

Sol.

For Rakesh

Let SP = Rs x

$$C = x \left(\frac{100}{125} \right) = \frac{4}{5}x$$

$$\text{Profit} = x - \frac{4}{5}x = \frac{x}{5}$$

For Deepak

$$C = x \left(\frac{75}{100} \right) = \frac{3}{4}x$$

$$\therefore \text{for deepak, Profit} = \frac{x}{4}$$

Acc. to question

$$\frac{x}{4} - \frac{x}{5} = \text{Rs } 100$$

$$x = \text{Rs } 2000$$

S4. Ans.(b)

Sol.

$$r = \frac{35}{2} \text{ dm} = \left(\frac{35}{2} \times 10 \right) = 175 \text{ cm,}$$

$$h = 24 \text{ dm} = 240 \text{ cm}$$

$$\text{Volume of drum} = \left(\frac{22}{7} \times 175 \times 175 \times 240 \right)$$

$$= (22 \times 25 \times 175 \times 240) \text{ cm}^3$$

$$\text{Volume of a tin} = (25 \times 22 \times 35) \text{ cm}^3$$

$$\text{Number of tins} = \left(\frac{22 \times 25 \times 175 \times 240}{25 \times 22 \times 35} \right) = 1200$$

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S5. Ans.(d)**Sol.** Let, radius = 5x and height = 12x cm.

$$= \frac{1}{3} \times \frac{22}{7} \times 12x \times 5x \times 5x = \frac{2200}{7} \Rightarrow x = 1$$

$$\therefore r = 5 \text{ and } h = 12$$

$$\therefore \ell = \sqrt{r^2 + h^2} = \sqrt{25 + 144} = \sqrt{169} = 13 \text{ cm}$$

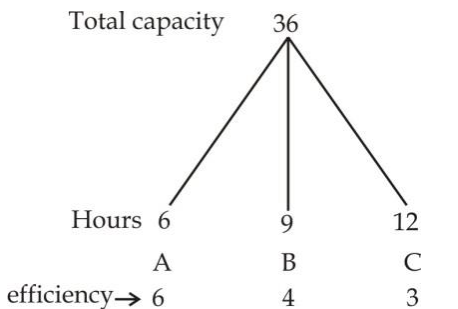
S6. Ans.(c)**Sol.** Let tank will be filled "x hours after 10 am

$$\therefore \frac{x}{2} + \frac{x-1}{6} = 1$$

$$\frac{3x + x - 1}{6} = 1$$

$$\Rightarrow x = \frac{7}{4} = 1 \frac{3}{4} = 1 \text{ hr. } 45 \text{ minute}$$

So, tank will be filled at 10 + 1 : 45 = 11 : 45 am

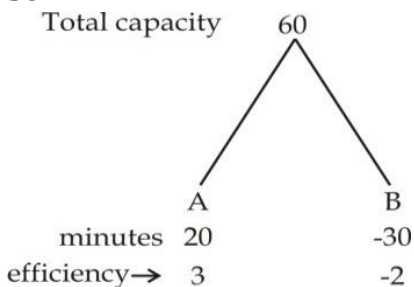
S7. Ans.(c)**Sol**

$$\Rightarrow (B + C) \text{ in half an hours } \frac{7}{2} \text{ units}$$

$$\text{Remaining} = 36 - \frac{7}{2} = \frac{65}{2}$$

$$\Rightarrow \text{Time taken by all three pipes to fill remaining part}$$

$$= \frac{65}{2(6 + 4 + 3)} = 2 \frac{1}{2} \text{ hrs.}$$

S8. Ans.(c)**Sol.**

Total efficiency in 2 minutes = (3 - 2) = 1 unit/2 minutes

In 1st minutes A fill 3 units & in 2nd, B empty 2 units

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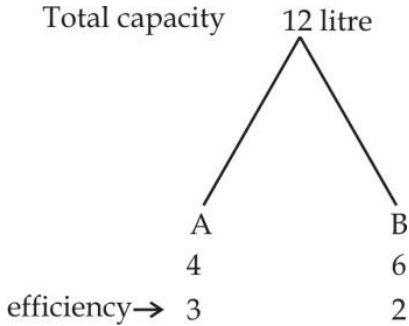
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	Efficiency	Time
	$\frac{1 \times 57}{57}$	$\frac{2 \times 57}{114}$
(A+B) together →	$\frac{1 \times 57}{57}$	$\frac{2 \times 57}{114}$
A work →	$\frac{3 \text{ unit}}{60}$	$\frac{1 \text{ mint}}{115}$

So, required answer = 115 minutes

S9. Ans.(b)

Sol.



A/q, for 1st hour, A is opened & for 2nd hours 'B' is opened. So, work done in 4 hours = 2 (3 + 2) = 10

Remaining = 12 - 10 = 2 ltr.

⇒ 2 lt. will be filled by

A in $\frac{2}{3}$ hrs.

So, total time = $4 + \frac{2}{3}$ hrs = $4\frac{2}{3}$ hrs

S10. Ans.(a)

Sol. He can select a girl in 6 ways and a boy in 8 ways. Therefore, by fundamental principle of multiplication, he can select a girl and a boy in $6 \times 8 = 48$ ways. i.e.,

Place: G B

Selection: 6 8

Total ways = $6 \times 8 = 48$

S11. Ans.(b)

Sol. $441 - 233 + 1650 \approx ? + 1226$

⇒ $1858 \approx ? + 1226$

⇒ $? \approx 1858 - 1226 \approx 632 \approx 630$

S12. Ans.(c)

Sol. $? \approx 23 \times 19 \times 8 \approx 3496 \approx 3500$

S13. Ans.(c)

Sol.

$$? \approx \frac{1300 \times 74}{100} + \frac{1900 \times 10}{100}$$

$$\approx 962 + 190 \approx 1152 \approx 1150$$

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S14. Ans.(a)**Sol.**

$$? \approx \left(\frac{8}{3}\right)^2 \times \frac{400}{40} \times \frac{900}{40} \approx 1600$$

S15. Ans.(d)**Sol.**

$$? \approx \frac{700 \times 90}{100} + \frac{1000 \times 50}{100} - 170$$

$$\approx 630 + 500 - 170 \approx 960$$

S16. Ans.(c)**Sol.** Let side of square is a cm.

$$\therefore a^2 = 196$$

$$\Rightarrow a = 14 \text{ cm}$$

$$\therefore \text{radius of larger circle} = 28 \text{ cm}$$

$$\therefore \text{radius of smaller circle} = 28 \times \frac{3}{7} = 12 \text{ cm}$$

$$\therefore \text{Circumference of smaller circle} = 2 \times \pi \times 12 = 24 \pi \text{ cm}$$

S17. Ans.(b)**Sol.** Sum of all angles of quadrilateral = 360

$$\Rightarrow 3x + 4x + 6x + 7x = 360$$

$$\Rightarrow x = 18$$

$$\therefore \text{Second largest angle} = 6 \times 18$$

$$= 108$$

$$\therefore \text{adjacent angle of parallelogram}$$

$$= 180 - \frac{108}{2} = 126^\circ$$

S18. Ans.(b)**Sol.** Radius of sheet = slant height of cone = 14 cm

And circumference of sheet = circumference of base of cone

$$\text{or, } \pi \times 14 = 2 \times \pi \times r$$

$$\text{or, } r = 7 \text{ cm}$$

$$\therefore \text{height of cone} = \sqrt{14^2 - 7^2} = 7\sqrt{3} \text{ cm} \approx 12 \text{ cm}$$

S19. Ans.(c)**Sol.** RUMMY

There are 5 letters.

$$\text{And number of words formed} = \frac{5!}{2!}$$

$$= \frac{5 \times 4 \times 3 \times 2 \times 1}{2 \times 1} = \frac{120}{2} = 60$$



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S20. Ans.(d)**Sol.** Let sides of rectangle = a, 2a, side of a square = b

$$2(a+2a) = 4b, a = \frac{2}{3}b$$

$$\text{Area of rectangle} = a \times 2a = 2a^2 \text{ or } \left[\frac{8}{9}\right]b^2$$

$$\text{Area of square} = b^2$$

$$\text{Ratio} = 8:9$$

S21. Ans.(c)

$$\text{Sol. } \frac{250 \times 14}{100} \times \frac{150 \times ?}{100} = 840$$

$$\Rightarrow 35 \times \frac{3}{2} \times ? = 840$$

$$\Rightarrow ? = \frac{840 \times 2}{105} = 16$$

S22. Ans.(e)

$$\text{Sol. } 25 \times 14 - 42 + 4^? = 18^2$$

$$\Rightarrow 350 - 42 + 4^? = 324$$

$$\Rightarrow 4^? = 324 - 308 = 16$$

$$? = 2$$

S23. Ans.(a)**Sol.**

$$(17 - 9 + 3) + \left(\frac{1}{2} - \frac{5}{6} + \frac{7}{12}\right) = ?$$

$$\Rightarrow 11 + \frac{1}{4} = ?$$

$$\Rightarrow ? = 11\frac{1}{4}$$

S24. Ans.(e)

$$\text{Sol. } 28.314 - 31.4272 + 113.92 = ? + 29.113$$

$$\Rightarrow ? = 142.234 - 60.5402$$

$$= 81.6938$$

S25. Ans.(c)**Sol.**

$$\frac{1}{6} \times \frac{92}{100} \times \frac{24}{23} \times 650 = 85 + ?$$

$$\Rightarrow \frac{4}{25} \times 650 = 85 + ?$$

$$? = 104 - 85 = 19$$



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