

# [A] ANSWERS:-

5. in n p  

$$72 + 63 + 54 + \dots \Rightarrow 9(n-1) = 72$$
  
 Now,  $a = 72$ ;  $d = -9$ ;  $t_n = 0 \Rightarrow \boxed{n = 9}$   

$$\therefore t_n = a + (n-1)d$$
  

$$\Rightarrow 0 = 72 - 9(n-1)$$

6  

$$2/ (a) 4^{11} \times 7^5 \times 11^3$$
  

$$= (2 \times 2)^{11} \times 7^5 \times 11^3$$
  

$$\therefore \{(2 \times 11) + (1 \times 5) + (1 \times 3)\} = (22 + 5 + 3) = \boxed{30}$$

7. of + 1.  

$$3. (b) \frac{\sqrt{12+\sqrt{8}}(\sqrt{3}-\sqrt{2})}{5+\sqrt{24}} = \sqrt{10-2 \cdot 2\sqrt{6}}$$
  

$$= \sqrt{\frac{(2\sqrt{3}+2\sqrt{2})(\sqrt{3}-\sqrt{2})}{5+\sqrt{24}}} = \sqrt{(\sqrt{6})^2 + (2)^2 - 2 \cdot 2 \cdot \sqrt{6}}$$
  

$$= \sqrt{\frac{2(\sqrt{3}+\sqrt{2})(\sqrt{3}-\sqrt{2})}{5+2\sqrt{6}}} = \sqrt{(\sqrt{6}-\sqrt{2})^2}$$
  

$$= \sqrt{\frac{2(5-2\sqrt{6})}{1}} = \boxed{\sqrt{6}-2}$$

8.  

$$1. (a) \text{HCF of } 75, 45 \text{ is } 15.$$
  

$$\therefore \left(\frac{75}{15} + \frac{45}{15}\right) = (5+3) = \boxed{8}$$

5. (b) LCM of 1, 6, 10, 15 is 60.  

$$\therefore N = 60x + 2$$
  

$$N = \{1000000 + (60-40)\} + 2$$
  

$$= 100022$$

60 | 1000000  
 60  
 400  
 360  
 400  
 360  
 400  
 360  
 40

$$\therefore (1+2+2) = \boxed{5}$$

[A] ANSWERS :- (7)

$$(2) \left[ \frac{1 \cdot 2 \cdot 4 + 2 \cdot 4 \cdot 8 + 3 \cdot 6 \cdot 12 + \dots + n \cdot n \cdot n}{1 \cdot 3 \cdot 9 + 2 \cdot 6 \cdot 18 + 3 \cdot 9 \cdot 27 + \dots + n \cdot n \cdot n} \right]^{\frac{1}{3}} \\ = \left[ \frac{8(1+8+27+\dots+n^3)}{27(1+8+27+\dots+n^3)} \right]^{\frac{1}{3}} = \left( \frac{8}{27} \right)^{\frac{1}{3}} = \boxed{\frac{2}{3}}$$

$$8. (a) x+y = \frac{\sqrt{3}+1}{\sqrt{3}-1} + \frac{\sqrt{3}-1}{\sqrt{3}+1} = \frac{(x+y)^2 + 3xy}{(x+y)^2 - 3xy} \\ = \frac{(\sqrt{3}+1)(\sqrt{3}-1)}{(\sqrt{3}-1)(\sqrt{3}+1)} = \frac{(x+y)^2 + 3xy}{(x+y)^2 - 3xy} \\ = \frac{2(3+1)}{2} = 4 \\ \text{Now, } xy = 1 \\ \left| = \frac{(x+y)^2 + 3xy}{(x+y)^2 - 3xy} = \frac{(4)^2 + 3}{(4)^2 - 3} = \boxed{\frac{19}{15}} \right.$$

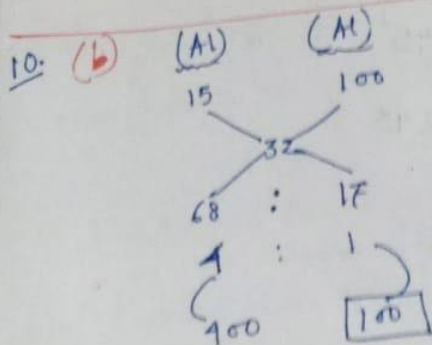
9 (b) Let the maximum marks be  $100x$ .

$\therefore$  According to the question:

$$30x + 6 = 40x - 6$$

$$\Rightarrow 10x = 12$$

$$\Rightarrow 100x = \boxed{120}$$



# 1A1 ANSWERS :- <8>

5.

11. (c) Total Weight of  $(A+B+C) = (87 \times 3) = 252 \text{ kg}$

New total Weight of  $(A+B+C+D) = (80 \times 4) = 320 \text{ kg}$

$\therefore D = (320 - 252) \text{ kg} = 68 \text{ kg}$

$E = (68 + 3) = 71 \text{ kg}$

$\therefore (E+B+C+D) = (77 \times 4) = 316 \text{ kg}$

$\therefore (A-E) = (320 - 316) = 4$

$= A = (E + 4) = \boxed{75 \text{ kg}}$

12. (c) Avg =  $\frac{52}{5} = 10.4$

24.85  
10.4  
29  
13.6 : 0.85  
16 : 1

$\therefore 16 : 1$   
5  
 $\boxed{80}$

13. (c)  $\sqrt[3]{4}$ ;  $\sqrt[3]{6}$ ;  $\sqrt[3]{15}$ ;  $\sqrt[3]{245}$

$4^{\frac{1}{3}}$ ;  $6^{\frac{1}{3}}$ ;  $15^{\frac{1}{3}}$ ;  $245^{\frac{1}{3}}$

LCM of 3, 4, 6, 12 is 12

$\therefore 4^{\frac{12}{3}}$ ;  $6^{\frac{12}{4}}$ ;  $15^{\frac{12}{6}}$ ;  $245^{\frac{12}{12}}$

$4^4$ ;  $6^3$ ;  $15^2$ ;  $245^1$

256; 216; 225; 245

$\therefore$  Biggest is :  $\boxed{\sqrt[3]{4}}$

# [A] ANSWERS :- (7)

14. (a) (₹ 1) (50p) (25p)

Value : 13 11 7

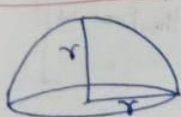
Coins : 13 (11 × 2) (7 × 4)

$$\therefore (13 + 22 + 28) = 63$$

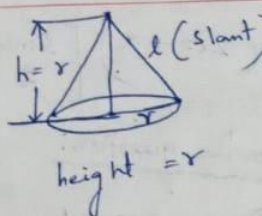
According to the question:-

$$\begin{aligned} 63 &= 378 \\ 1 &= 6 \\ 22 &= \boxed{132} \end{aligned}$$

15. (b)



$\therefore$  Radius =  $r$



height =  $r$

Hemisphere : Cone

$$2\pi r^2 : \pi r l$$

$$2\pi r^2 : \pi r \sqrt{2} r$$

$$2\pi r^2 : \pi r \sqrt{2} r$$

$$= 2 : \sqrt{2}$$

$$= \boxed{\sqrt{2} : 1}$$

16. (b) CP (Mean) =  $\left( \frac{100}{110} \times 440 \right) = ₹ 400/\text{kg}$

(a) 420 (b) 360

400  
40 : 20

$$\boxed{2 : 1}$$

17. (a) Present age ratio : 1:3 or We can write 8:6.

Now, Ratio of the ages after 4 years  $\longrightarrow$  9:7

$$\therefore (7-6) = 1 \Rightarrow 1 = 4 \text{ yrs.}$$

$$\therefore \text{Present age of Man} = (8 \times 4) = 32 \text{ yrs.}$$

$$\text{Woman} = (6 \times 4) = 24 \text{ yrs.}$$

Now, According to the option; We can write

$$\frac{32-12}{24-12} = \frac{20}{12} = \frac{5}{3}$$

The option (a);  
Satisfying the  
given condition

$\therefore$  Req<sup>d</sup> ans is  $\boxed{12}$

**[A] ANSWERS :- (10)**

18 (d) Let the total time duration be  $x$  years.

By the Condition:

$$\left(x - \frac{5x}{11}\right) = 30$$

$$\Rightarrow \frac{6x}{11} = 30$$

$$\Rightarrow x = 55$$

$\therefore$  Required answer is  $\rightarrow$

$$(55 - 30) = \boxed{25 \text{ yrs}}$$

17 (a) I Case:  $\rightarrow CP = (500 - 2x)$  [Since; the profit is  $2x$ ]

II Case:  $CP = (200 + x)$  [Since; the loss is  $x$ ]

$\therefore$  According to the question:

$$(500 - 2x) = 200 + x$$

$$x = 100$$

$$\Rightarrow CP = (200 + x) = \boxed{300}$$

20 (c) Let the respective distance and the speed of current be  $d$  km and  $x$  K/h.

$\therefore$  By the Condition:

$$\frac{3d}{(20+x)} = \frac{d}{(20-x)}$$

$$60 - 3x = 20 + x$$

$$\Rightarrow \boxed{x = 10}$$

$$\left[ \because T = \frac{D}{V} \right]$$

**[A] ANSWERS :- (11)**

21. (•) Let the time be  $t$  years and the principal be  $\text{₹}P$ .

$$\therefore P + \frac{P \times 4 \times (t-2)}{100} = P + \frac{P \times 3 \times t}{100}$$

$$\Rightarrow 4(t-2) = 3t$$

$$\Rightarrow t = 8$$

$$\therefore P + \frac{P \times 3 \times 8}{100} = 620$$

$$\Rightarrow \frac{3P}{25} = \frac{20}{620}$$

$$\Rightarrow \boxed{P = 500}$$

22. (L) Let HCF =  $x$ ; LCM =  $45x$ .  
Let the respective numbers are  $a$  and  $125$ .

$$\therefore \text{LCM} + \text{HCF} = 46x \quad \text{LCM} \times \text{HCF} = a \times 125$$

$$\therefore 46x = 1150$$

$$\Rightarrow x = 25$$

$$\Rightarrow a = \frac{45 \times 25 \times 25}{125}$$

$$a = \boxed{225}$$

23. (C) Let the number of keepers be  $x$ .

$$\text{Total heads} = (50 + 45 + 8 + x) = (103 + x)$$

$$\text{Total feet} = \{4(45 + 8) + 2(50 + x)\} = (312 + 2x)$$

$\therefore$  According to the question:

$$(312 + 2x) - (103 + x) = 224$$

$$\Rightarrow x + 209 = 224$$

$$\Rightarrow x = \boxed{15}$$

[A] ANSWERS :-

<12>

24. (b) Let the number of water taps be  $x$ .

$\therefore$  Number of outlet taps are  $= (8-x)$

$\therefore$  According to the question:-

$$\frac{x}{12} - \frac{(8-x)}{36} = \frac{1}{3}$$

$$\Rightarrow \frac{3x - (8-x)}{36} = \frac{1}{3}$$

$$\Rightarrow 4x = 20$$

$$\Rightarrow x = \boxed{5}$$

25. (c) Let the speed of goods train  $= x \text{ km/hr}$

By the condition:

$$10 \times x = 90 \times 4$$

$$\Rightarrow x = \boxed{36 \text{ K/h}}$$

$\therefore X$