SmartKeeda
The Question Bank

Presents

TestZone

India's least priced Test Series platform

JOIN

12 Month Plan
2018-19 All Test Series

@ Just

₹ 399/-
300+ Full Length Tests

- ☑ **Brilliant Test Analysis**
- ☑ **Excellent Content**
- ☑ **Unmatched Explanations**

JOIN NOW

Mixed Maths Questions for SBI PO Pre, IBPS PO Pre, IBPS Clerk Mains and SBI Clerk Mains Exams.

Word Problems Quiz 5

Direction: Study the following questions carefully and choose the right answer.

1. A firm of readymade garments makes both men's and women's shirts. Its average profit is 5% of the sales. Its profit in men's shirts average 9% of the sales and women's shirts comprise 60% of the output. The average profit per sale rupee in women shirts is

A. 0.0266   B. 0.0466   C. 0.0433   D. 0.0233   E. None of these

2. P, Q and R started a business in partnership by investing Rs. 15000, Rs. 20000 and Rs. 24000, respectively. P left the partnership after 4 months taking back the original amount he invested. At the end of the year, P, Q and R received their profits. Q received a profit of Rs. 2000. How much profit P would have received if he had continued till end of year assuming the annual profit to have increased proportionally?

A. Rs. 1200   B. Rs. 1350   C. Rs. 1500   D. Rs. 1620   E. Rs. 1720

3. If the ratio of speed of doing work of three persons is 1 : 3 : 5, what is the ratio of time taken by these people to do the same amount of work?

A. 15 : 5 : 7   B. 3 : 15 : 5   C. 15 : 3 : 5   D. 15 : 5 : 3   E. None of these

4. A person had a certain amount. He invested 5/6th of it in shares, 5% of it in mutual funds, 10% of it in debentures and kept the remaining Rs. 850 with him. If got interest at 10% for a year on debentures, what amount did he get as interest?

A. Rs. 5,100   B. Rs. 7,650   C. Rs. 510   D. Rs. 765   E. Rs. 255

5. A family consists of paternal grandparents, parents and three grandchildren. The average age of the grandparents is 70 years, that of the parents is 40 years and that of the grandchildren is 10 years. What is the average age of the family?

A. $34\frac{4}{7}$ years   B. $35\frac{5}{7}$ years   C. $32\frac{1}{7}$ years   D. $37\frac{1}{2}$ years   E. None of these

6. When 4 fair coins are tossed together what is the probability of getting at least 3 heads?

A. $\dfrac{1}{4}$ B. $\dfrac{3}{4}$ C. $\dfrac{5}{16}$ D. $\dfrac{3}{8}$ E. None of these

7. The diameter of a circle is 1 cm more than twice the side of a particular square. If the semi-perimeter of the square is 14 cm, what is the approximate area of the circle?

A. 177 cm^2 B. 706 cm^2 C. 389 cm^2 D. 195 cm^2 E. None of these

8. Ramesh goes downstream at speed of 15 km/hr. However when he goes upstream his speed decreases by 66.66 %. What will be the net speed of his boat when it travels upstream if the speed of the stream is doubled?

A. 0 km/ hr   B. 5 km/ hr   C. 2.5 km/ hr   D. 20 km/ hr   E. 25 km/ hr

9. A tank is in the form of a right circular cone with vertex at top. There are two pipes attached to the tank. One of them can fill the tank alone in 20 minutes, while other can do the same in 40 minutes. If both pipes are opened, how much time will they take to fill the tank to half of its height (in minutes)?

A. 8.33   B. 11.67   C. 13.33   D. 14.5   E. 18.87

10. A certain number of cricket balls were purchased for Rs. 1800. Six more cricket balls could have been purchased for the same amount if each cricket ball was cheaper by Rs. 10. Find the number of cricket balls purchased.

A. 36   B. 24   C. 30   D. 25   E. None of these

Correct Answers:

1	2	3	4	5	6	7	8	9	10
D	C	D	C	B	C	A	A	B	C

Explanations:

1. Let the total sales be Rs. 100
Women's shirt comprise 60% of the output
⇒ Rs. 60 out of Rs. 100 is sales of female's shirts
∴ Men's shirts comprise (100 − 60) = 40% of the output
⇒ Rs. 40 out of Rs. 100 is the sales of male's shirts
∴ Average profit from men's shirt = 9% of 40 = Rs. 3.6
Overall average profit = 5 % of 100 = Rs. 5
∴ Average profit from women's shirts = 5 − 3.6 = Rs. 1.4
This is from the sale of Rs. 60

∴ The profit per rupee is $\dfrac{1.4}{60}$ = 0.0233

∴ The average profit per sale rupee in women shirts is Rs. 0.0233
Hence, option D is correct.

2. Money invested by Q = Rs. 20000 for 12 months
Total money invested = Rs. 15000 for 4 months + Rs. 20000 for 12 months + Rs. 24000 for 12 months
So, Q's investment : Total investment : : Q's profit : Total profit

Therefore, total profit $= \dfrac{(15 \times 4 + 20 \times 12 + 24 \times 12)}{(20 \times 12)} \times$ Rs. 2000 = Rs. 4900

Profit earned by P $= \dfrac{(15 \times 4)}{(20 \times 12)} \times$ Rs. 2000 = Rs. 500

If P would have continued for full year (12 months) instead of 4 months, his profit would have been 3 times of what he got now = 3 × Rs. 500 = Rs. 1500
Hence, option C is correct.

3. Let the speed of doing work of the three persons be 1x, 3x and 5x respectively
Time taken by each person = amount of work done/speed of doing work
Let the amount of work for each person = y (∵ work done is same)

The time taken by the first person $= \dfrac{y}{x}$

The time taken by the second person $= \dfrac{y}{3x}$

The time taken by the third person $= \dfrac{y}{5x}$

The ratio of time taken $= \dfrac{y}{x} : \dfrac{y}{3x} : \dfrac{y}{5x}$

⇒ $1 : \dfrac{1}{3} : \dfrac{1}{5}$ = 15 : 5 : 3
Hence, option D is correct.

4. 5/6 corresponds to 83.33%.

Hence, the amount that he kept with him corresponds to 100 − (83.33 + 5 + 10) = 1.67% of the total amount with him. This corresponds to Rs. 850

Also, because he placed 10% in debentures and he got 10% interest, amount obtained in interest = 10% of 10% of amount with him i.e. 1% of the amount with him.

$\therefore$ Interest earned $= \dfrac{(850 \times 1)}{1.67} = 850 \times \dfrac{3}{5} = 510$

Hence, option C is correct.

---

5. The family consists of grandparents, parents and three grandchildren.
So, the number of family members = 2 + 2 + 3 = 7
We know,

Average of quantities $= \dfrac{\text{Sum of all quantities}}{\text{No. of quantities}}$

The average age of the grandparents is 70 years. So, the total age of the grandparents = 70 × 2 = 140 years

The average age of the parents is 40 years. So, the total age of the parents = 40 × 2 = 80 years

The average age of the grandchildren is 10 years. So, the total age of the grandchildren = 10 × 3 = 30 years

$\therefore$ The total age of the family members = 140 + 80 + 30 = 250 years.

$\therefore$ The average age of the family $= \dfrac{250}{7} = 35\dfrac{5}{7}$ years

Hence, option B is correct.

---

6. When 4 fair coins are tossed simultaneously, the total number of outcomes is $2^4 = 16$
At least 3 heads implies that one can get either 3 heads or 4 heads.
One can get 3 heads in $^4C_3 = 4$ ways and can get 4 heads in $^4C_4 = 1$ ways.
$\therefore$ Total number of favorable outcomes = 4 + 1 = 5

$\therefore$ The reqd. probability $= \dfrac{5}{16}$

Hence, option C is correct.

7. Let the side of the square be s cm and the diameter of the circle be d cm.

∴ d = 2s + 1

Also, semi-perimeter = 2s = 14 cm

∴ d = 14 + 1 = 15 cm

∴ r = 15/2 = 7.5 cm

∴ Area = πr^2 = 3.14 × $(7.5)^2$ ≈ 177 sq.cm

Hence, option A is correct.

---

8. Let the Speed of Ramesh = x km/hr

Let the Speed of stream = y km/hr

∴   x + y = 15   **...(i)**

Now as a decreases of 66.66% is there

∴ $x - y = \left(\dfrac{100 - 66.66}{100}\right) \times 15 = 5$ **...(ii)**

Adding and subtracting (i) from (ii)

x = 10 km/hr

y = 5 km/hr

Now when stream speed will double ,upstream speed will be = x − 2y = 10 − (2 × 5) = 0 km/hr

Hence, option A is correct.

---

9. In case of right circular cone with vertex at top, the volume is directly proportional to height and square of base radius.

To fill the tank to half its height, the upper half will be empty.

The radius of base of empty half will be half of radius of base of tank and height will also be half.

⇒The volume of empty half of tank will be 1/8 of total volume of tank.

⇒We need to fill 7/8 of total tank.

Pipes can fill tank individually in 20 and 40 minutes.

⇒ In a minute, they can fill 1/20 and 1/40 of tank.

Let the time taken be T minutes.

$$\Rightarrow \frac{T}{20} + \frac{T}{40} = \frac{7}{8}$$

$$\frac{3T}{40} = \frac{7}{8}$$

⇒ 24T = 280

⇒ T = 11.67

∴   Time taken will be 11.67 minutes.

Hence, option B is correct.

10.   Let the number of cricket balls purchased be 'x'

Price of each cricket ball = $\dfrac{1800}{x}$

Number of cricket balls that can be purchased if price of each ball Rs.10 cheaper = (x + 6)

Price of each cricket ball if each cricket ball was Rs.10 cheaper = $\dfrac{1800}{(x + 6)}$

$\Rightarrow \dfrac{1800}{x} - 10 = \dfrac{1800}{(x + 6)}$

$\Rightarrow \dfrac{(1800 - 10x)}{x} = \dfrac{1800}{(x + 6)}$

$\Rightarrow 1800x = (1800 - 10x)(x + 6)$
$\Rightarrow 1800x = 1800(x + 6) - 10x(x + 6)$
$\Rightarrow 1800x = 1800x + 10800 - 10x^2 - 60x$
$\Rightarrow 1800x - 1800x - 10800 + 10x^2 + 60x = 0$
$\Rightarrow 10x^2 + 60x - 10800 = 0$
$\Rightarrow 10(x^2 + 6x - 1080) = 0$

$\Rightarrow x^2 + 6x - 1080 = 0$
$\Rightarrow x^2 + 36x - 30x - 1080 = 0$
$\Rightarrow x(x + 36) - 30(x + 36) = 0$
$\Rightarrow (x + 36)(x - 30) = 0$

$\therefore$ x = 30   ($\because$ The value of 'x' can't be negative)

Hence, option C is correct.