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**BBA**

**summer paper**

**Business maths.**

# MCQs

1) (e)

2) (b)

3) (b)

4) (e)

5) (d)

6) (e)

7) (d)

8) (e)

9) (e)

10) (d)

Q.2 (a)

Let  $s$  and  $4s$  be the son and father. Then

$$2(s+24) = 4s+24$$

$$2s + 48 = 4s + 24$$

$$2s - 4s = 48 - 24$$

$$\frac{2s}{2} = \frac{24}{2}$$

$$s = 12$$

$$\text{and } 4s = 48$$

So the son is 12 and father is 48

Q.2 (b)

Simultaneous Equation

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

$$4x - \frac{1}{5} = \frac{2}{2}$$

From Eq (1)

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

$$x = -\frac{1}{3} - 3y$$

Put this in eq (2)

$$4\left(-\frac{1}{3} - 3y\right) - \frac{1}{5} = 2$$

$$-\frac{4}{3} - 12y - \frac{1}{5} = 2$$

$$-\frac{23}{15} - 1 = 12y$$

$$y = -\frac{19}{90}$$

From Eq (2)

$$4x = 1 + \frac{1}{5}$$

$$x = \frac{3}{10}$$

Answer

Q: 3 (a)

Exponential laws  $\frac{x^{-3}}{x^{-3/2}} \div \frac{x}{x^{3/4} y^{-2}} \times \frac{x^2 y^{-3}}{y^{1/3}}$

Solution:-

$$(x^{-3} x^{3/2}) \div (x x^{-3/4} y^2) \times (x^2 y^{-3} y^{-1/3})$$

Arranging by variables

$$x^{-3+3/2} \div (x^{1-3/4} x^2) (y^2 y^{-3-1/3})$$

$$\frac{x^{-3/2}}{x^{1/4+2} x y^{2-10/3}}$$

$$\frac{x^{-3/2}}{x^{9/4} x y^{-4/3}}$$

$$x^{-3/2} x^{-9/4} x y^{4/3}$$

$$x^{-3/2} x^{-9/4} x y^{4/3}$$

$$~~x^{-3/2} x^{-9/4} x y^{4/3}~~$$

$$x^{-15/4} x y^{4/3}$$

Q: 3 (B)

x by using logarithmic laws

$$x^3 = \frac{7^3 \times (0.4500)^2}{0.0004 \times (0.0205)^4}$$

Taking log on B.S

$$\log(x^3) = \log(7^3 \times 0.45^2) - \log(4 \times 10^{-4} \times 0.0205^4)$$

$$3 \log(x) = \log(7^3) + \log(0.45^2) - [\log(4) + \log(10^{-4}) + \log(0.0205^4)]$$

$$3 \log(x) = 3 \log(7) + 2 \log(0.45) - \log(4) + 4 \log(10) - 4 \log(0.0205)$$

$$3 \log(x) = 11.992644$$

$$\log(x) = 3.997548$$

$$x = 9943.7$$

Q: 4

Translation ~~to~~ descriptive to set notation

$$U = \{2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22\}$$

$$A = \{4, 8, 12, 16\}$$

$$B = \{4, 8, 12\}$$

$$C = \{2, 4, 6, 8, 10, 12, 14, 16, 18\}$$

(a) Show that  $(A \cup B)^c = (A^c \cap B^c)$  and

LHS

$$A \cup B = \{4, 8, 12, 16\}$$

$$(A \cup B)^c = U - (A \cup B) = \{2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22\} - \{4, 8, 12, 16\}$$

$$(A \cup B)^c = \{2, 6, 10, 14, 18, 20, 22\}$$

RHS

$$A^c = U - A = \{2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22\} - \{4, 8, 12, 16\}$$

$$A^c = \{2, 6, 10, 14, 18, 20, 22\}$$

$$B^c = U - B = \{2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22\} - \{4, 8, 12\}$$

$$B^c = \{2, 6, 10, 14, 16, 18, 20, 22\}$$

$$A^c \cap B^c = \{2, 6, 10, 14, 18, 20, 22\} \cap \{2, 6, 10, 14, 16, 18, 20, 22\}$$

$$A^c \cap B^c = \{2, 6, 10, 14, 18, 20, 22\}$$

$$\therefore \text{LHS} = \text{RHS}$$

$$(b) A \cap (B \cup C) = (A \cap B) \cup (A \cap C)$$

LHS

$$A \cap (B \cup C)$$

$$B \cup C = \{4, 8, 12\} \cup \{2, 4, 6, 8, 10, 12, 14, 16, 18\}$$

$$B \cup C = \{2, 4, 6, 8, 10, 12, 14, 16, 18\}$$

$$A \cap (B \cup C) = \{4, 8, 12, 16\} \cap \{2, 4, 6, 8, 10, 12, 14, 16, 18\}$$

$$A \cap (B \cup C) = \{4, 8, 12, 16\} \cap \{2, 4, 6, 8, 10, 12, 14, 16, 18\}$$

RHS

$$(A \cap B) \cup (A \cap C)$$

$$A \cap B = \{4, 8, 12, 16\} \cap \{4, 8, 12\}$$

$$A \cap B = \{4, 8, 12\}$$

$$A \cap C = \{4, 8, 12, 16\} \cap \{2, 4, 6, 8, 10, 12, 14, 16, 18\}$$

$$A \cap C = \{4, 8, 12, 16\}$$

$$(A \cap B) \cup (A \cap C) = \{4, 8, 12\} \cup \{4, 8, 12, 16\}$$

$$(A \cap B) \cup (A \cap C) = \{4, 8, 12, 16\}$$

$$\therefore \text{LHS} = \text{RHS}$$

Q: 5 (a) list Price = \$150

Trade discount = 20%, Find net

$$20\% \text{ of list Price} = \frac{20}{100} \times 150$$

$$20\% \text{ of list Price} = \$30$$

Net cost = list Price - Trade Discount

$$\text{Net cost} = 150 - 30$$

$$\text{Net cost} = \$120$$

Q: 5 (c)

Cost Price = \$10

Markup = \$6.20

Find Markup on cost, also find selling Price

Selling Price

Selling Price = Markup + cost Price

$$\text{Selling Price} = 10 + 6.20 = \$16.20$$

$$\text{Markup percent on cost} = \frac{6.20}{10} \times 100$$

$$= 62\%$$