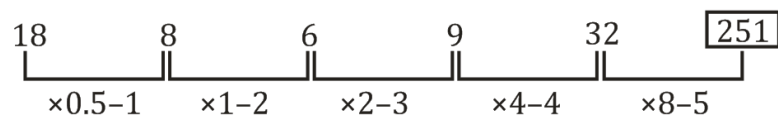


Solutions

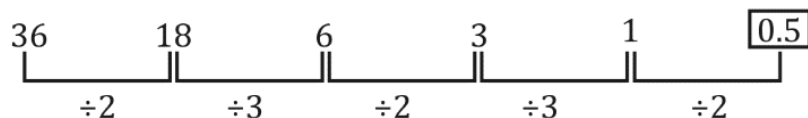
S66. Ans.(c)

Sol.



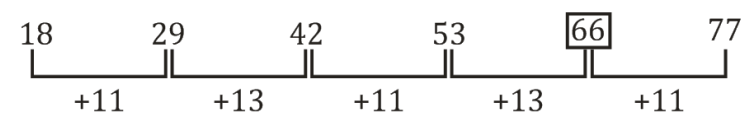
S67. Ans.(a)

Sol.



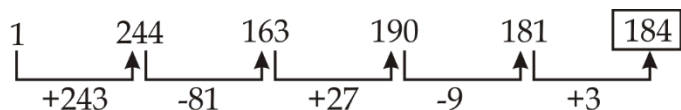
S68. Ans.(d)

Sol.



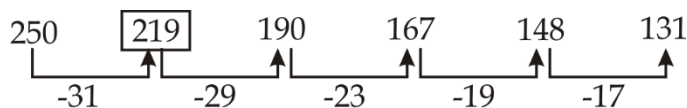
S69. Ans.(b)

Sol.



S70. Ans.(e)

Sol.



S71. Ans.(c)

Sol. Required difference

$$= \frac{(24 + 16) - (18 + 12)}{100} \times 300$$

$$= (40 - 30) \times 3 = 30$$

$$= 30$$

S72. Ans.(e)

Sol. Total number of students who gave exam in August 2017

$$= 300 \times \frac{120}{100} = 360$$

S73. Ans.(a)

Sol. Required central angle = $16 \times 3.6 = 57.6^\circ$

S74. Ans.(b)

Sol. Required average

$$= \frac{1}{3} \left(\frac{13+18+24}{100} \right) \times 300 = 55$$

S75. Ans.(d)

Sol. Required Ratio

$$= \frac{17 + 16 + 18}{13 + 17 + 24} = \frac{51}{54} = \frac{17}{18}$$

S76. Ans.(a)

Sol.

$$? = \sqrt{16 \times 15 + 24 \times 12 + 97}$$

$$? = \sqrt{240 + 288 + 97}$$

$$? = \sqrt{625}$$

$$? = 25$$

S77. Ans.(a)

Sol.

$$? = \frac{28}{100} \times 420 + \frac{36}{100} \times 540$$

$$? = 117.6 + 194.4$$

$$? = 312$$

S78. Ans.(c)

Sol. $75\% \times 450 + 25\% \times 850 = ?$

$$? = \frac{25}{100} [3 \times 450 + 850] = \frac{1}{4} [2200] = 550$$

S79. Ans.(e)

$$\text{Sol. } \sqrt{?} = 104 - \sqrt{7396}$$

$$\sqrt{?} = 104 - 86$$

$$? = (18)^2 = 324$$

S80. Ans.(d)

Sol. Sum of present ages of A, B and C = 66 years

Sum of present age of B and C = $18 \times 2 + 6 = 42$

Present age of A = $66 - 42 = 24$

A's age nine years hence = $24 + 9 = 33$ years

S81. Ans.(d)

Sol. Let speed of boat in still water and speed of stream be $8x$ and x respectively.

ATQ,

$$\frac{67.5}{2.5} = 8x + x$$

$$x = \frac{27}{9}$$

$$x = 3$$

$$\text{Required difference} = 8x - x = 7x = 7 \times 3 = 21$$

S82. Ans.(c)

Sol. Breadth of rectangle = x metre

Length = $(x + 6)$ metre

$$\therefore 2(x + 6 + x) = 84$$

$$\Rightarrow 2x = 42 - 6 = 36$$

$$\Rightarrow x = 18$$

$$\therefore \text{Length} = 18 + 6 = 24 \text{ metre}$$

$\therefore$ Area of rectangle

= Length $\times$ Breadth

$$= 18 \times 24$$

$$= 432 \text{ sq. metre}$$

S83. Ans.(b)

Sol. Overall rate for 2 years at 20% p.a compounded yearly is equivalent to $20 + 20 + \frac{20 \times 20}{100} = 44\%$

ATQ,

$$44\% \text{ of sum} = 1716$$

$$100\% \text{ of sum} = 3900$$

$$\text{Simple interest earned} = \frac{3900 \times 15 \times 3}{100} = \text{Rs. } 1755$$

S84. Ans.(c)

Sol. Let cost price of article = $100x$

ATQ,

$$42x - 18x = 110.4$$

$$24x = 110.4$$

$$x = 4.6$$

$$\text{Cost price of article} = 4.6 \times 100 = 460$$

$$\text{Selling price to earn } 25\% \text{ profit} = 460 \times \frac{125}{100} = \text{Rs } 575$$

S85. Ans.(c)**Sol.**

Efficiency	Total work
$3 \leftarrow A \rightarrow 20$	
$+ 4 \leftarrow B \rightarrow 15$	$\searrow$
$\hline 7 \leftarrow A+B$	$\nearrow 60$

Work done by A in last 6 days = $6 \times 3 = 18$ work.

Remaining work done by A + B = $60 - 18 = 42$ work

B left the work after = $\frac{42}{7} = 6$ days.

S86. Ans.(e)**Sol.**

(i) $x^2 = 196$

$x = \pm 14$

(ii) $y^2 + 2y - 48 = 0$

$y^2 + 8y - 6y - 48 = 0$

$y(y + 8) - 6(y + 8) = 0$

$(y - 6)(y + 8) = 0$

$y = 6, -8$

No relation can be established between x and y

S87. Ans.(e)**Sol.**

(i) $x^2 - 11x + 24 = 0$

$x^2 - 8x - 3x + 24 = 0$

$x(x - 8) - 3(x - 8) = 0$

$(x - 3)(x - 8) = 0$

$x = 8, 3$

(ii) $y^2 - 14y + 45 = 0$

$y^2 - 9y - 5y + 45 = 0$

$y(y - 9) - 5(y - 9) = 0$

$(y - 5)(y - 9) = 0$

$y = 5, 9$

No relation can be established between x and y

S88. Ans.(b)**Sol.**

(i) $2x^2 - 4x + 2 = 0$

$2x^2 - 2x - 2x + 2 = 0$

$2x(x - 1) - 2(x - 1) = 0$

$(2x - 2)(x - 1) = 0$

$x = 1, 1$

$$(ii) 2y^2 - y - 1 = 0$$

$$2y^2 - 2y + y - 1 = 0$$

$$2y(y - 1) + 1(y - 1) = 0$$

$$(2y + 1)(y - 1) = 0$$

$$y = -\frac{1}{2}, 1$$

$$x \geq y$$

S89. Ans.(d)

Sol.

$$(i) x^2 - 15x + 56 = 0$$

$$x^2 - 7x - 8x + 56 = 0$$

$$x(x - 7) - 8(x - 7) = 0$$

$$(x - 8)(x - 7) = 0$$

$$x = 8, 7$$

$$(i) y = \sqrt{64}$$

$$y = 8$$

$$y \geq x$$

S90. Ans.(e)

Sol.

$$(i) x^2 - x - 6 = 0$$

$$x^2 - 3x + 2x - 6 = 0$$

$$x(x - 3) + 2(x - 3) = 0$$

$$(x - 3)(x + 2) = 0$$

$$x = 3, -2$$

$$(ii) y^2 - 6y + 8 = 0$$

$$y^2 - 2y - 4y + 8 = 0$$

$$y(y - 2) - 4(y - 2) = 0$$

$$(y - 2)(y - 4) = 0$$

$$y = 2, 4$$

No relation can be established between x and y

S91. Ans.(a)

Sol.

$$\sqrt{441} - \sqrt{144} = \sqrt{?}$$

$$21 - 12 = \sqrt{?}$$

$$9 = \sqrt{?}$$

$$? = 81$$

S92. Ans.(c)

Sol.

$$18\frac{2}{3} - 7\frac{1}{4} = ? + 1\frac{1}{2}$$

$$18 - 7 + \frac{2}{3} - \frac{1}{4} = ? + 1 + \frac{1}{2}$$

$$10 + \frac{2}{3} - \frac{1}{4} - \frac{1}{2} = ?$$

$$10 + \frac{8-3-6}{12} = ?$$

$$10 - \frac{1}{12} = ?$$

$$9\frac{11}{12} = ?$$

S93. Ans.(d)

Sol.

$$\sqrt{484} \times \sqrt{169} = ? + 50\% \text{ of } 312$$

$$22 \times 13 = ? + \frac{50}{100} \times 312$$

$$286 = ? + 156$$

$$? = 130$$

S94. Ans.(b)

Sol.

$$15^2 + 36^2 = ? \times \sqrt[3]{2197}$$

$$225 + 1296 = ? \times 13$$

$$\frac{1521}{13} = ?$$

$$117 = ?$$

S95. Ans.(e)

Sol. Let cost price of article = 100x

Selling price of one article = 120x

ATQ,

$$3 \times 20x - 2 \times 20x = 80$$

$$20x = 80$$

$$x = 4$$

Cost price of article = Rs 400

S96. Ans.(a)

Sol.

Quantity I:

Length of train 'A' = x

Length of train 'B' = 0.5x

ATQ,

$$x + 0.5x = 12 \times (25 + 15)$$

$$1.5x = 480$$

$$x = 320 \text{ meters}$$

Quantity II: 160 meters

Quantity I > Quantity II

S97. Ans.(b)

Sol. Let average of a, b and c be x

$$a + b + c = 3x$$

$$\text{And, } b + c + d = 3x + 3$$

$$\Rightarrow d - a = 3$$

$$\text{And, } d + a = 39$$

$$d = 21 \text{ and } a = 18$$

Quantity I:

$$a = 18$$

Quantity II: 21

Quantity II > Quantity I

S98. Ans.(a)

Sol. Quantity I: Due to leakage only 80% of the cistern is filled this means 20% of tank is leaked out by leakage which is equal to 60 liters

$$20\% = 60$$

$$100\% = 300 \text{ liters}$$

$$\text{Capacity of tank} = 300 \text{ liters}$$

Quantity II: 250 liters

Quantity I > Quantity II

S99. Ans.(e)

Sol.

Quantity I:

Let speed of boat in still water and speed of stream be $2x$ and x respectively

ATQ,

$$\Rightarrow 32 = \frac{72}{3x} + \frac{72}{x}$$

$$\Rightarrow x = \frac{96}{32} = 3$$

$$\text{Downstream speed} = 2x + x = 3x = 9 \text{ kmph}$$

Quantity II: 9 kmph

Quantity I = Quantity II

S100. Ans.(e)

Sol.

Quantity I:

$$\text{Side of square} = \sqrt{324} = 18 \text{ cm}$$

Let length of rectangle be x and breadth of rectangle be $(x-4)$ cm

ATQ,

$$x + x - 4 = \frac{4 \times 18}{2} = 36$$

$$x = 20$$

$$\text{Area of rectangle} = 20 \times 16 = 320 \text{ cm}^2$$

Quantity II: 320 cm^2

Quantity I = Quantity II