RATIO & PROPORTION_CSAT_ENGLISH ANSWER

Answer 1: (B)

$a : b : c$

4 : 5

7 : 9

28 : 35 : 45

Answer 2: (A)

4A = 5B = 7C = K

4A=K, 5B=K, 7C=K

$$A=\frac{K}{4}, B=\frac{K}{5}, C=\frac{K}{7}$$

$$A:B:C=\frac{K}{4}:\frac{K}{5}:\frac{K}{7}$$

$$=\left(\frac{1}{4}:\frac{1}{5}:\frac{1}{7}\right)\times 140$$

= 35 : 28 : 20

Answer 3: (C)

$$x=\frac{2}{3}y, \quad y=\frac{3}{4}z$$

$$\frac{x}{y}=\frac{2}{3} \qquad \frac{y}{z}=\frac{3}{4}$$

x : y : z

2 : 3

3 : 4

2 : 3 : 4

Answer 4: (A)

$$\frac{l}{m}=\frac{n}{o}=\frac{p}{q}=\frac{3}{4}$$

l =3x , n =3x , p =3x

m =4x , o = 4x , q =4x

$$\therefore \frac{la+nb+pc}{ma+ob+qc}$$

$$=\frac{3xa+3xb+3xc}{4xa+4xb+4xc}$$

$$=\frac{3x(a+b+c)}{4x(a+b+c)}$$

$$=\frac{3}{4}$$

Answer 5: (D)

A : B : C : D

2 : 3 : 4 : 5

Sum of the number $=2x+3x+4x+5x$

= 280

$14x = 280$

$x = 20$

II[nd] Number = 3 x 20 = 60

IV[th] Number = 5 X 20 = 100

Sum of II[nd] and IV Number = 60 + 100

= 160

Answer 6: (A)

Let First Number = a

Second number = b

According to the question

a + b = 60

a-b = 12

a = 36, b = 24

Ratio a : b

36 : 24

3 : 2

Answer 7: (B)

$$\frac{x}{y}=\frac{2}{9}, \quad \frac{z}{x}=\frac{3}{4}$$

y : x : z

9 : 2

4 : 3

18 : 4 : 3

25 units = 6250

1 unit = 250

x = 18 x 250 = Rs 4500

Y = 4 x 250 = Rs 1000

Z = 3 x 250 = Rs 750

Answer 8: (B)

3 Numbers are $2x$, $3x$ and $4x$

A.T.Q.

$\therefore \quad 4x^2+9x^2+16x^2=2900$

$29x^2 = 2900$

$x^2 = 100$

$x = 10$

Difference between greatest and smallest number = $4x - 2x = 2x$

= 2x10 = 20

Answer 9: (C)

a : b = 5 : 7

Now reducing 40 from each number.

$$\frac{5x-40}{7x-40}=\frac{17}{27}$$

135 x -1080 = 119 x - 680

135 x -119 x = 1080 - 680

16 x = 400

$= x = \frac{400}{16}$

x = 25

Difference = a – b

= 7 x - 5 x

= 2 x

= 2 x 25

= 50

Answer 10: (A)

$$\frac{5-x}{7-x}=\frac{15}{13}$$

$$65-13x=105-15x$$

$$15x-13x=105-65$$

$$2x=40$$

$$x=20$$

Answer 11: (C)

Two numbers are =

$\frac{3}{2}x$, $\frac{8}{3}x$

$$\frac{\frac{3}{2}x+15}{\frac{8}{3}x+15}=\frac{\frac{5}{3}}{\frac{5}{2}}$$

$$\frac{15}{4}x+\frac{75}{2}=\frac{40}{9}x+\frac{75}{3}$$

$$\frac{75}{2}-\frac{75}{3}=\frac{40}{9}x-\frac{15}{4}x$$

$$\frac{75}{6}=\frac{25}{36}x$$

x = 18

Greatest number = $\frac{8}{3}x18$

= 48

Answer 12: (A)

Third proportional = $\frac{b^2}{a}$

Third proportional = $\frac{20x20}{8}$

= 50

Answer 13: (C)

mean proportion = $\sqrt{ab}$

$=\sqrt{18x50}$

$=30$

Answer 14: (D)

Mean proportional $=\sqrt{ab}$

$=\sqrt{4.8x10.8}$

Third proportional $=\frac{b^2}{a}$

$=\frac{(2.4)^2}{0.4}$

Ratio = $\frac{\sqrt{4.8\times10.8}}{\frac{2.4\times2.4}{0.4}}$

$=\frac{7.2}{14.4}$

= 1 : 2

Answer 15: (A)

$$\frac{a}{b}=\frac{c}{x}$$

$$\frac{17}{23}=\frac{51}{x}$$

x = 69

Fourth proportion = 69

Answer 16: (D)

Fourth proportion = $\frac{a}{b}=\frac{c}{x}$

$$\frac{3}{4}=\frac{9}{x}$$

Mean proportion = $\sqrt{ab}$

$=\sqrt{50x2}$

Ratio $\frac{9x4}{3}:\sqrt{50x2}$

12 : 10

6 : 5

Answer 17: (A)

Number of boys = 14 x

Number of girls = 19 x

A. T. Q.

14 x + 19 x = 2145

33 x = 2145

x = 65

Number of girls = 65 x 19

= 1235

Answer 18: (B)

	A : B : C
Originally	2 : 3 : 5
	↓2 ↓2 ↓2
	4 : 5 : 7

After adding 10 students in each class

2 unit = 10

1 unit = 5

∴ Originally

= 2x5 + 3x5 + 5x5

= 10 + 15 + 25

= 50

Answer 19: (A)

	A : B : C
Originally	1 : 2 : 3
	↓2 ↓2 ↓2
After increased	3 : 4 : 5

2 unit = 40

1 unit = 20

∴ Originally

= 1 x 20 + 2 x 20 + 3 x 20

= 20 + 40 + 60

= 120

Answer 20: (C)

Acid	:	Water
3	:	5

A. T. Q.

$$\frac{3}{5+x}=\frac{3}{7}$$

$21 = 15 + 3x$

$3x = 6$

$x = 2$