Quiz Date: 19th June 2020

Q1. Given that 24 carat gold is pure gold. 18 carat gold is ¾ pure gold and 20 carat gold is 5/6 pure gold. The ratio of the pure gold in 18 carat gold to pure gold in 20 carat gold is :
(a) 3 : 8
(b) 9 : 10
(c) 1 : 2
(d) 8 : 5
(e) 5 : 8

Q2. The average score of boys in an examination of a school is 71 and that of the girls is 73. The average score of the whole school in that examination is 71.8. Find the ratio of the number of boys to the number of girls that appeared in the examination.
(a) 4 : 5
(b) 3 : 2
(c) 3 : 5
(d) 5 : 2
(e) 2 : 5

Q3. A and B invest Rs 4000 and Rs 5000 in a business. A receives Rs 100 per month out of the profit as a remuneration for running the business and the rest of profit is divided in proportion to the investments. If in a year 'A' totally receives Rs 3600, what does B receive?
(a) Rs. 4000
(b) Rs. 3000
(c) Rs. 5000
(d) Rs. 6000
(e) Rs. 3500

Q4. Find the total number of arrangements by which the word LAPTOP can be arranged?
(a) 360
(b) 365
(c) 345
(d) 400
(e) 720

Q5. In order to maximize his gain, a theatre owner decides to reduce the price of tickets by 20% and as a result of this, the sales of tickets increase by 40%. If, as a result of these changes, he is able to increase his weekly collection by Rs. 1,68,000, find by what value did the gross collection increase per day?
(a) 14,000
(b) 18,000
(c) 24,000
(d) 20,000
(e) 16,000

Q6. A person bought 864 articles and sold 800 of them for the price he paid 864 articles. He sold the remaining articles at the same price per article as the other 800. The percentage gain on the entire transaction is
(a) 7.5%
(b) 8%
(c) 8.5 %
(d) 9 %
(e) 10 %

Q7. An alloy of gold and silver weight 50g. It contains 80% Gold. How much gold should be added to the alloy so that percentage of gold is increased to 90?
(a) 50 g
(b) 60 g
(c) 30 g
(d) 40 g
(e) 20 g

Q8. If Dennis is one-third the age of his father Keith now, and was one-fourth the age of his father 5 years ago, then how old will his father Keith be 5 years from now?
(a) 2 years
(b) 45 years
(c) 40 years
(d) 50 years
(e) 48 years

Q9.Suresh travelled 1200 km by Air which formed 2/5 of his trip. 1/3 of the whole trip, he travelled by the car and the rest of the journey he travelled by train. The distance travelled by the train was
(a) 1600 km
(b) 800 km
(c) 800 m
(d) 480 km
(e) 1200 km

Q10. Two trains starting at the same time from two stations 200 km apart and going in opposite directions cross each other at a distance of 150 km from one of the stations. What is the ratio of their speed?
(a) 1 : 2
(b) 1 : 4
(c) 3 : 1
(d) 3 : 2
(e) 3 : 4

Directions (11-15): In the following questions two equations numbered (I) and (II) are given. You have to solve both equations and give answer

Q11. **I.** $x^2 + 15x + 56 = 0$
II. $y^2 + 17y + 72 = 0$
(a) if x > y
(b) if x ≥ y
(c) if x < y
(d) if x ≤ y
(e) If x = y or the relationship cannot be established

Q12. **I.** $2x^2 - 9x + 10 = 0$
II. $9y^2 - 57y + 88 = 0$
(a) if x > y
(b) if x ≥ y
(c) if x < y
(d) if x ≤ y
(e) If x = y or the relationship cannot be established

Q13. **I.** $3x + 2y = 7\sqrt{14}$
II. $10x + 14y = 38\sqrt{14}$
(a) if x > y
(b) if x ≥ y
(c) if x < y
(d) if x ≤ y
(e) If x = y or the relationship cannot be established

Q14. **I.** $x^2 - 11x + 28 = 0$
II. $y^2 + 3y - 40 = 0$
(a) if x > y
(b) if x ≥ y
(c) if x < y

(d) if x ≤ y
(e) If x = y or the relationship cannot be established

Q15. **I.** $x^2 = 361$
II. $y = \sqrt{441}$
(a) if x > y
(b) if x ≥ y
(c) if x < y
(d) if x ≤ y
(e) If x = y or the relationship cannot be established

Solutions

S1. Ans.(b)
Sol.
Required ratio
$= \frac{\frac{3}{4}}{\frac{5}{6}} = 9 : 10$

S2. Ans.(b)
Sol.
Let total no. of students are (x + y)
Where,
x = No. of boys
y = No. of girls
∴ 71x + 73y = 71.8 (x+ y)
⇒ 8x = 12y
⇒ x : y = 3 : 2

S3. Ans.(b)
Sol.

Monthly receiving of A = $\frac{3600}{12}$

= 300

(A's profit) : (B's profit) = 4000 : 5000

= 4 : 5

B's profit after a month = $\frac{5 \times 200}{4}$

= 250

∴ Total receiving of B = 250 × 12

= 3000

S4. Ans.(a)

Sol.

Total no. of arrangements = $\frac{6!}{2!}$

= 360

S5. Ans.(c)

Sol.

Gross collection per day will increased by

= $\frac{1,68,000}{7}$

= Rs. 24,000

S6. Ans.(b)

Sol.

Let C.P. to man per article = x

∴ S.P. of 800 articles = 864x

and S.P. of 64 articles

= $\frac{864x}{800} \times 64$

= 69.12x

∴ % profit = $\frac{933.12 - 864}{864} \times 100$

= 8%

S7. Ans.(a)
Sol.
Initial quantity of gold
$= \frac{80}{100} \times 50$
= 40g
and that of silver = 10g
∴ Let x gm of gold is added to the mixture.
$\therefore (50 + x) \times \frac{90}{100} = 40 + x$
⇒ 45 + 0.9x = 40 + x
⇒ x = 50g

S8. Ans.(d)
Sol.
Let present age of father = $3x$
Present age of Dennis = x
According to question,
$3x - 5 = (x - 5)4$
$\Rightarrow 3x - 5 = 4x - 20$
$\therefore x = 15$ years
∴ Required answer
= 15 × 3 + 5 = 50 years

S9. Ans.(b)
Sol.
Total distance travelled by Suresh
$= 1200 \times \frac{5}{2}$
= 3,000 km
Distance travelled by train
= 3000 – (1200 + 1000)
= 800 km

S10. Ans.(c)
Sol.
Let the speed of the train = x kmph
Then, speed of another train = y kmph
$\therefore \frac{150}{x} = \frac{50}{y}$
$\Rightarrow x : y = 3 : 1$

S11. Ans.(b)

Sol.

I. $x^2 + 15x + 56 = 0$

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

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

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

$x = -7, -8$

II. $y^2 + 17y + 72 = 0$

$y^2 + 9y + 8y + 72 = 0$

$y(y+9) + 8(y+9) = 0$

$(y+8)(y+9) = 0$

$y = -8, -9$

$x \geq y$

S12. Ans.(c)

Sol.

I. $2x^2 - 9x + 10 = 0$

$2x^2 - 5x - 4x + 10 = 0$

$x(2x-5) - 2(2x-5) = 0$

$(x-2)(2x-5) = 0$

$\Rightarrow x = 2, \frac{5}{2}$

II. $9y^2 - 57y + 88 = 0$

$9y^2 - 24y - 33y + 88 = 0$

$3y(3y-8) - 11(3y-8) = 0$

$(3y-11)(3y-8) = 0$

$y = \frac{11}{3}, \frac{8}{3}$

$x < y$

S13. Ans.(c)

Sol.

$3x + 2y = 7\sqrt{14}$ ...(i)

$10x + 14y = 38\sqrt{14}$ ...(ii)

On solving (i) & (ii)

$x = \sqrt{14}, y = 2\sqrt{14}$

$x < y$

S14. Ans.(e)

Sol.

I. $x^2 - 11x + 28 = 0$
$x^2 - 7x - 4x + 28 = 0$
$x(x-7) - 4(x - 7) = 0$
$(x - 4)(x - 7) = 0$
$x = 4, 7$
II. $y^2 + 3y - 40 = 0$
$y^2 + 8y - 5y - 40 = 0$
$y(y + 8) - 5(y + 8) = 0$
$(y + 8)(y - 5) = 0$
$y = -8, 5$
Relationship cannot be established

S15. Ans.(c)
Sol.
$x^2 = 361$
$x = \pm 19$
$y = \sqrt{441} = 21$
$x < y$