

Question 1

Which number is same with $\left(3\frac{3}{4} - \frac{5}{6}\right) \div \frac{5}{24}$

- (a) 14
- (b) 9.6
- (c) 10
- (d) 13
- (e) 11

Question 2

Perform the indicated operations $3(2x - 5) - 4(5 - 3x)$

- (a) $-6x-30$
- (b) $9x-25$
- (c) $3x-25$
- (d) $18x-35$
- (e) $-4x-25$

Question 3

Solve the equation $\frac{2x-3}{5} - \frac{4x+5}{3} = 8$

- (a) -10
- (b) -11
- (c) -13
- (d) $-\frac{104}{14}$
- (e) -9

Question 4

Calculate and simplify the solution $\sqrt{9 \cdot \sqrt[5]{32}}$

- (a) $3\sqrt{2}$
- (b) 6
- (c) $\sqrt{2}$
- (d) $6\sqrt{2}$
- (e) $4\sqrt{2}$

Question 5

Solve the equation $\frac{2}{3}k - k + \frac{3}{8} = \frac{1}{2}$

- (a) 1
- (b) -1
- (c) $-\frac{3}{8}$
- (d) $\frac{3}{8}$
- (e) 0

Question 6

Rationalize the denominator $\frac{6}{2-\sqrt{6}}$

- (a) $6 + 3\sqrt{6}$
- (b) $6 - 3\sqrt{6}$
- (c) $-6 - 3\sqrt{6}$
- (d) $-6 + 3\sqrt{6}$
- (e) $6 + 6\sqrt{3}$

Question 7

What is p in $3p - 1 < 6p - 2(p - 1)$

- (a) $p > -3$
- (b) $p < -3$
- (c) $p > 2$
- (d) $p < 3$
- (e) $p < -1$

Question 8

Simplify following expression $3x(x^2 - 3x + 5y) - 2x^2(x - 8)$

- (a) $x^3 - 25x^2 + 15xy$
- (b) $x^3 - 7x^2 + 15xy$
- (c) $-5x^3 + x^2 + 15xy$
- (d) $x^3 + 7x^2 + 15xy$
- (e) $-3x^3 - 7x^2 + 15xy$

Question 9

Factorize the given polynomial $3m^3 + 12m^2 + 9m$

- (a) $3m(m-3)(m-3)$
- (b) $3m(m+3)(m+1)$
- (c) $3m(m-1)(m-9)$
- (d) $m(m+3)(m+3)$
- (e) $3m(m+3)(m-3)$

Question 10

If $A = \{1,3,5,7\}$ and $B = \{-3, -1,0,3,7\}$ then find $N(A \cup B) - N(A \cap B)$.

(N is the number of elements)

- (a) 5
- (b) 7
- (c) 1
- (d) 3
- (e) 2

Question 11

Solve the system of linear equations $\begin{cases} x + 2y = 5 \\ -2x + 5y = -1 \end{cases}$

- (a) (-2;2)
- (b) (7;-1)
- (c) (-1;3)
- (d) (3;1)
- (e) (-1;-2)

Question 12

Simplify the expression $\frac{7^{\frac{1}{3}} \cdot r^{-3} \cdot 7}{7^{\frac{2}{3}} (r^{-2})^2}$

- (a) $3r$
- (b) r^2
- (c) r^{-1}
- (d) r
- (e) $2r$

Question 13

Simplify irrational expression $\sqrt[3]{2} - \sqrt[3]{16} + 2 \cdot \sqrt[3]{54}$

- (a) $5\sqrt[3]{2}$
- (b) $\sqrt[3]{2}$
- (c) 0
- (d) $-7\sqrt[3]{2}$
- (e) -1

Question 14

If $-3 < -2x + 5 < 7$ then

- (a) $4 > x > -1$
- (b) $8 > x > -2$
- (c) $-4 > x > 1$
- (d) $8 > x > 12$
- (e) $2 > x > 6$

Question 15

Find the real roots of the quadratic equation $2x^2 - 9x + 10 = 0$

- (a) 5 and -2
- (b) 5 and -4
- (c) 2.5 and 2
- (d) 2 and 5
- (e) -2 and -5

Question 16

Simplify expression $\left(\frac{a^2 \cdot b^{-3} \cdot a}{a^{-5} \cdot b^2 \cdot b^{-1}}\right)^{-3}$

(a) $\frac{b^6}{a^{12}}$

(b) $\frac{b^{12}}{a^{24}}$

(c) $\frac{a^{12}}{b^{24}}$

(d) $\frac{a^{24}}{b^{12}}$

(e) $\frac{a^8}{b^{12}}$

Question 17

Solve the given inequality $x^2 + 3x - 10 \leq 0$

(a) [1;10]

(b) [-2;5]

(c) [3;5]

(d) [-5;2]

(e) [2;4]

Question 18

Write rational expression in lowest terms $\frac{6r-18}{r^2-8r+16} \div \frac{4r-12}{4r-16}$

(a) $\frac{1}{r-4}$

(b) $\frac{6}{r-4}$

(c) 6

(d) $r - 4$

(e) $\frac{2}{r-2}$

Question 19,20 and 21 are related

A line is joining coordinates (2; 1) and (-2; 5)

Question 19

Find slope of the line

- (a) -1
- (b) -3
- (c) 0
- (d) unidentified
- (e) -2

Question 20

Find the equation of line

- (a) $y=3$
- (b) $x=3$
- (c) $y=-x+3$
- (d) $y=3x-1$
- (e) $y=3x+1$

Question 21

Find the coordinates where the line cuts the axes

- (a) (0;-1) and (1;0)
- (b) (-3;0) and (0; -2)
- (c) (0;0) and (2;-3)
- (d) (0;3) and (3;0)
- (e) (1;0) and (-3;-1)

Question 22,23,24 and 25 are related

The equation of curve $y = x^2 - 6x + 8$ and the line $y = x - 2$

Question 22

Find the coordinates of intersection of curve and line

- (a) (2;0) and (5;3)
- (b) (-3;0) and (2;0)
- (c) (5;3) and (-1;-3)
- (d) (3;1) and (0;8)
- (e) (-2;-3) and (1; 0)

Question 23

Find the turning point (coordinate) of the curve

- (a) (0;8)
- (b) (2;0)
- (c) (3;-1)
- (d) (2;8)
- (e) (-3;-2)

Question 24

Find the coordinates of curve where it cuts the x-axis

- (a) (2;0) and (0;8)
- (b) (3;0) and (0;4)
- (c) (2;0) and (4;0)
- (d) (-3;0) and (5;0)
- (e) (1; -3) and (-1;0)

Question 25

Find the coordinates of curve where it cuts the y-axis

- (a) (0;8)
- (b) (2;0)
- (c) (4;0)
- (d) (4;8)
- (e) (8;2)

-End of Test -

Answers:

1. A	6. C	11. D	16. B	21. D
2. D	7. A	12. D	17. D	22. A
3. B	8. D	13. A	18. B	23. C
4. A	9. B	14. A	19. A	24. C
5. C	10. A	15. C	20. C	25. A