

Math 90 Study Questions

Question 1:

Solve $3x - 7 = 14$

1) _____

- (a) $x = \frac{-2}{3}$ (b) $x = \frac{2}{3}$ (c) $x = 7$ (d) *none of these*

Question 2:

Solve $x - 3(2 - x) = 4x - (x - 1)$

2) _____

- (a) $x = -7$ (b) $x = 7$ (c) $x = -1$ (d) *none of these*

Question 3:

Identify the x-intercept and y-intercept of the line $4x - y = 12$

3) _____

- (a) $x - \text{int: } (3,0)$ & $y - \text{int: } (0, -12)$ (b) $x - \text{int: } (4,0)$ & $y - \text{int: } (0, -1)$
(c) $x - \text{int: } (3,0)$ & $y - \text{int: } (0, 12)$ (d) *none of these*

Question 4:

Find the slope of the line joining the points $(-1, 3)$ and $(4, -3)$.

4) _____

- (a) $m = \frac{5}{6}$ (b) $m = \frac{-6}{5}$ (c) $m = 0$ (d) *none of these*

Question 5:

The system of linear equations $\begin{cases} y = \frac{-3}{2}x + 10 \\ y = \frac{2}{3}x + 10 \end{cases}$ has

5) _____

- (a) *no solutions* (b) *a single point solution* (c) *infinitely many solutions*

Question 6:

Subtract $(6x^2 - x + 1) - (3x^2 - 4x - 3)$

6) _____

- (a) $3x^2 + 3x + 4$ (b) $3x^2 - 5x - 2$
(c) $3x^4 + 3x^2 + 4$ (d) *none of these*

Question 7:

Multiply $(4x + 7)(3x - 5)$

7) _____

- (a) $7x^2 + 7x + 2$ (b) $12x^2 + x - 35$
(c) $12x^2 - 41x - 35$ (d) *none of these*

Question 8:

Factor completely $4y^2 - 1$ or state that it is prime

8) _____

- (a) *prime* (b) $(2y + 1)(2y - 1)$
(c) $4(y + 1)(y - 1)$ (d) *none of these*

Question 9:

Completely factor $3x^2 - 7x + 2$

9) _____

- (a) $(3x - 2)(x - 1)$ (b) $(3x - 1)(x - 2)$
(c) $3(x - 1)(x - 2)$ (d) *none of these*

Question 10:

Compute and simplify $\sqrt{27} - \sqrt{12} + 10\sqrt{3}$

10) _____

- (a) $10\sqrt{18}$ (b) $15\sqrt{3}$ (c) $11\sqrt{3}$ (d) *none of these*

Question 11:

Write the expression $\frac{3x-12}{x^2+x-20}$ in lowest terms

11) _____

- (a) $\frac{3x-6}{x^2+x-10}$ (b) $\frac{3}{x+5}$ (c) $\frac{-9}{x^2-20}$ (d) $\frac{3x-12}{x^2+x-20}$

Question 12:

Divide $\frac{24x^3-9x^2+12x-15}{3x^2}$

12) _____

- (a) $8x - 3 + \frac{12x - 15}{3x^2}$ (b) $8x - 3$
(c) $8x - 3 + \frac{4}{x} - \frac{5}{x^2}$ (d) $21x - 6 + \frac{9}{x} - \frac{12}{x^2}$

Question 13:

Divide $\frac{x^2-9}{3xy} \div \frac{5x+15}{6x^2}$

13) _____

- (a) $\frac{2x(x-3)}{5y}$ (b) $\frac{-(5x+15)}{2xy}$ (c) $\frac{(x^2-9)(5x+15)}{18x^3y}$ (d) $\frac{6(x-3)}{15y}$

Question 14:

Choose the statement that best fills in the blank:

$5x^2 - 2x^3 + 12x$ is _____

14) _____

- (a) *a trinomial of degree 2* (b) *a trinomial with leading coefficient - 2*
(c) *a quadratic expression* (d) *a trinomial with leading coefficient 5*

Question 15:

Give the slope of the line $5x - 3y = 45$

15) _____

- (a) $m = 5$ (b) $m = \frac{5}{3}$ (c) $m = \frac{-5}{3}$ (d)

Question 16:

Multiply $(3x + 7)^2$

16) _____

- (a) $9x^2 + 49$ (b) $6x^2 + 14$ (c) $9x^2 + 42x + 49$ (d) *none of these*

Question 17:

Solve $4x^2 = 12$

17) _____

- (a) $\{-3,3\}$ (b) $\{-\sqrt{3},\sqrt{3}\}$ (c) $\{9\}$ (d) $\{3\}$

Question 18:

Solve $4\sqrt{x} = 12$

18) _____

- (a) $\{-3,3\}$ (b) $\{-\sqrt{3},\sqrt{3}\}$ (c) $\{9\}$ (d) $\{3\}$

Question 19:

Which is a point on the line $6x - y = 12$?

19) _____

- (a) $(0,12)$ (b) $\left(\frac{1}{3}, -10\right)$ (c) $(1,6)$ (d) *none of these*

Question 20:

Solve $\frac{4}{3}x = 6$

20) _____

- (a) $\left\{\frac{9}{2}\right\}$ (b) $\left\{\frac{3}{2}\right\}$ (c) $\{2\}$ (d) $\{6\}$

Answers

- 1) c
- 2) b
- 3) a
- 4) b
- 5) b
- 6) a
- 7) b
- 8) b
- 9) b
- 10) c
- 11) b
- 12) c
- 13) a
- 14) b
- 15) b
- 16) c
- 17) b
- 18) c
- 19) b
- 20) a