

MAT 0024 – Final Exam Review

- Evaluate: $4^2 \div 2 \cdot 4 - 3|5 - 6|$
A. 29 B. -1 C. 5 D. 35 E. 1
- Evaluate: $-|-4|$
A. -4 B. 4 C. 0 D. Undefined E. None of these
- Simplify: $17x - 5x - x - 18x + 3x$
A. $-6x$ B. 0 C. $-4x$ D. $-7x$ E. None of these
- Solve $P = 2L + 2W$ for L
A. $L = P - 2L$ B. $L = 2(P - 2W)$ C. $L = \frac{P - 2W}{2}$ D. $L = \frac{2P - W}{2}$ E. $L = P - 2W$
- Solve: $12 - 4(x - 1) = 5(2x + 3) + 1$
A. -4 B. 1 C. 0 D. 3 E. None of these
- If 3 sodas cost \$2.25, how much would 7 sodas cost?
A. \$4.50 B. \$5.00 C. \$7.50 D. \$8.25 E. None of these
- Two is subtracted from three times a certain number and then that result is multiplied by 4 to produce 136. Find the number?
A. 12 B. 16 C. 46 D. 48 E. 182
- Solve the inequality: $-3x < 12$
A. $x < -4$ B. $x < 4$ C. $x > -4$ D. $x > 4$ E. None of these
- Find the value of the polynomial $-3x^2 - 2x - 3$ when $x = -2$.
A. 15 B. -11 C. -19 D. 12 E. None of these

10. Simplify the following algebraic expression: $3(x - 4y) - (x - 2y) + (2x - y)$

- A. $4x - 11y$ B. $4x - 15y$ C. $4x - 8y$
D. $2x - 8y$ E. None of these answers are correct

11. Which most specifically describes $7x^2 + 2x - 5$?

- A. Monomial B. Binomial C. Trinomial
D. Polynomial E. Not a Polynomial

12. Multiply $(6x - 5)^2$

- A. $36x^2 - 25$ B. $36x^2 - 60x + 25$ C. $36x^2 + 60x + 25$
D. $36x^2 - 25$ E. $36x^2 + 30x + 25$

13. Name the greatest common factor: $12r^{10}q^4 - 6r^9q - 36r^8q^2$

- A. $2r^8q^2$ B. $6r^8q^2$ C. $6r^{10}q^4$ D. $6r^8q$ E. $2r^{10}q$

14. Factor completely: $3x^2 - 10x - 8$

- A. $(3x - 8)(x + 1)$ B. $(3x - 4)(x - 2)$ C. $(3x + 2)(x - 4)$
D. $(3x - 2)(x + 4)$ E. Prime

15. Factor completely: $9u^2 - 64v^2$

- A. $(3u - 8v)^2$ B. $(3u + 8v)^2$ C. $(3u - 8v)(3u + 8v)$
D. $(9u - 8v)(u + 8v)$ E. Prime

16. Factor completely: $9x^2 - 30x + 25$

- A. $(3x - 5)(3x + 5)$ B. $(3x - 5)^2$ C. $(3x + 5)^2$
D. $(9x - 5)(x + 5)$ E. Prime

17. Factor completely: $2rs + 3rst - 8r - 12rt$.

- A. $r(2s + 3st - 8 - 12t)$ B. $(rs - 4r)(2 + 3t)$ C. $r(s - 4)(2 - 3t)$
D. $(3x + 7)(x - 2)$ E. $r(s - 4)(2 + 3t)$

18. Factor completely: $x^3 - 27$

- A. $(x-3)^3$ B. $(x-3)(x^2+9)$ C. $(x-3)(x^2-3x+9)$ D. $(x-3)(x^2+3x+9)$
E. $(x-9)(x^2-9x+81)$

19. Solve: $x^2 - 4x = 12$

- A. $\{0, 3\}$ B. $\{6, -2\}$ C. $\{-4, 2\}$ D. $\{4, 3\}$ E. $\{6, 2\}$

20. The hypotenuse of a right triangle is 8 inches longer than the shorter leg. The longer leg is 4 inches longer than the shorter leg. Find the length of the shorter leg.

- A. 6 inches B. 8 inches C. 15 inches D. 20 inches
E. None of these

21. Evaluate: $2^0 - 3^0$

- A. 1 B. 0 C. -1 D. 2 E. 3

22. Evaluate: $4^{-1} + 5^{-1}$

- A. -9 B. $\frac{1}{9}$ C. 9 D. $\frac{2}{9}$ E. $\frac{9}{20}$

23. Simplify: $\frac{(r^3)^{-2}(s^2)^4}{(s^{-3})^{-2}}$

- A. $\frac{s^2}{r^7}$ B. $\frac{s^{14}}{r^6}$ C. $\frac{s^2}{r^6}$ D. $\frac{r^6}{s^2}$ E. $\frac{r^2}{s}$

24. Write 0.0023 using Scientific Notation

- A. 2.3×10^3 B. 2.3×10^{-3} C. 2.3×10^{-4} D. 2.3×10^4 E. 2.3×10

25. Determine the values for which $\frac{x-4}{x^2-9}$ is undefined.

- A. 3 B. 3 and -3 C. 4, 3, and -3 D. 4 E. 2 and -2

26. Write the rational expression in lowest terms: $\frac{z^2 - 4}{z + 2}$

- A. $z - 2$ B. $z + 2$ C. $-z - 2$ D. $\frac{1}{z - 2}$ E. $\frac{1}{z + 2}$

27. Divide: $\frac{3x^3 + 6x^2 + 2}{3x^2}$

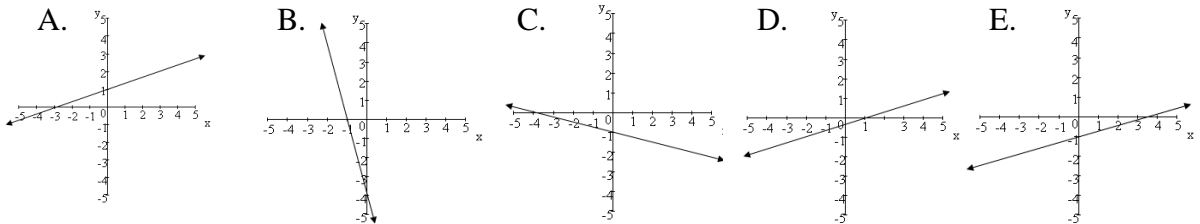
- A. $x + 2 + \frac{2}{3x^2}$ B. $x^2 + 2x + \frac{2}{3}$ C. $x + 2 + \frac{2}{3x}$ D. $3x + 2 + \frac{2}{3x^2}$

E. None of these

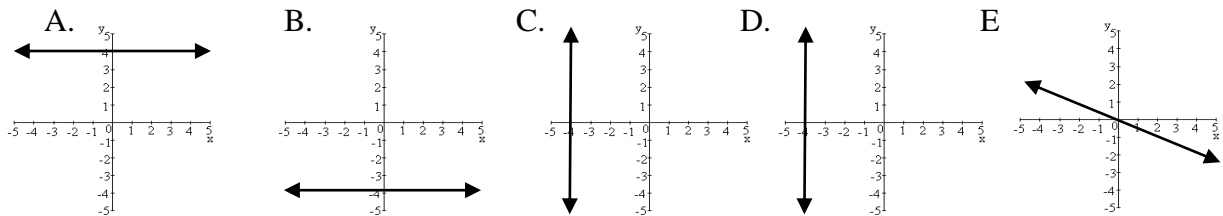
28. Find the y-intercept for $3x - 2y = 12$

- A. (0, 6) B. (4, 0) C. (4, -6) D. (2, -3) E. (0, -6)

29. Graph the linear equation $x + 4y = -4$



30. Graph the linear equation $y + 4 = 0$



31. Find the slope of a line passing through the points (3, 5) and (-1, 3).

- A. $\frac{2}{3}$ B. $\frac{1}{2}$ C. 1 D. 2 E. $-\frac{1}{2}$

32. $\sqrt{-36}$ is
- A. rational B. irrational C. Not a real number
33. Simplify: $\sqrt{75}$
- A. $5\sqrt{2}$ B. $5\sqrt{3}$ C. $3\sqrt{5}$ D. $2\sqrt{5}$ E. None of these
34. Simplify: $\sqrt{40}$
- A. $4\sqrt{10}$ B. $2\sqrt{10}$ C. $8\sqrt{5}$ D. 20 E. $5\sqrt{8}$
35. Add: $\sqrt{8} + \sqrt{18}$
- A. $\sqrt{24}$ B. 10 C. $5\sqrt{2}$ D. $2\sqrt{6}$ E. None of these
36. Simplify: $\sqrt{20x^9}$
- A. $10\sqrt{2x^9}$ B. $2\sqrt{5x^9}$ C. $2x^4\sqrt{5x}$ D. $2x^3\sqrt{5}$ E. $10x^3$
37. A rectangle has a length that is 6 inches longer than the width. If the area of the rectangle is 72 square inches, what is the length of the rectangle?
- A. 6 inches B. 4 inches C. 8 inches D. 12 inches. E. 9 inches
38. Solve the inequality, write the solution set in interval notation: $12x - 14 \geq 2(5x - 5)$
- A. $(-\infty, -2]$ B. $[2, \infty)$ C. $(-2, \infty)$ D. $(-\infty, 2)$ E. $[-2, \infty)$
39. The product of two consecutive integers is three less than three times their sum. Find the integers.
- A. 0,1 or 5,6 B. 0,1 or 6,7 C. 5,6 only D. 0,1 only E. None of these
40. From a point on a straight road, John and Fred ride bicycles in opposite directions. John rides his bike at 7 miles per hour and Fred rides his at 9 miles per hour. In how many hours will they be 80 miles apart ?
- A. 4 hours B. 6 hours C. 5 hours D. 9 hours E. Not enough information

Answers:

1. A
2. A
3. C
4. C
5. C
6. E
7. A
8. C
9. B
10. A
11. C
12. B
13. D
14. C
15. C
16. B
17. E
18. D
19. B
20. E
21. B
22. E
23. C
24. B
25. B
26. A
27. A
28. E
29. C
30. B
31. B
32. C
33. B
34. B
35. C
36. C
37. D
38. B
39. A
40. C

