

Sample Questions for Math Placement Test

LEVEL 1

1. $\frac{3}{2} - \frac{4}{5} =$

- A. $-\frac{1}{10}$
- B. $\frac{1}{3}$
- C. $\frac{7}{10}$ *
- D. $-\frac{1}{7}$

E. 1

2. $12a - 7b - (4a - 21b) =$

- A. $8a + 11b$
- B. $8a - 28b$
- C. $16a + 28b$
- D. $8a + 14b$ *
- E. $16a + 11b$

3. Solve for x when $5(1 - x) - 2 = 3x - 4$

- A. $7/8$ *
- B. $7/4$
- C. $-1/8$
- D. $7/2$
- E. $-1/2$

4. The fuel for a certain two cycle engine is a mixture of 8 parts gasoline and 2 parts oil. How many gallons of gasoline are needed to make 20 gallons of fuel?

- A. 12
- B. 14
- C. 15
- D. 16 *
- E. 18

5. Evaluate $x^2y - 2xy - y^2$ when $x = -3$ and $y = 4$

- A. 44 *
- B. -4
- C. -64
- D. -8
- E. 52

6. $(2x - 3)(3x + 4) =$

- A. $5x^2 - x - 12$
- B. $6x^2 - x - 12$ *
- C. $6x^2 - 17x - 12$
- D. $6x^2 - 12$
- E. $6x^2 - 9x - 12$

7. Solve for x when $4x - 3 < 5 - x$.

- A. $x > 8/5$
- B. $x > 8/3$
- C. $x < 2/3$
- D. $x < 8/5$ *
- E. $x < 8/3$

8. The base for a rectangular box measures 2 feet by 3 feet. What is the height in feet of the box if its volume is 54 cubic feet?

- A. 6
- B. 9 *
- C. 27
- D. 108
- E. 324

9. If $x = -3$, then $\frac{2|x|-x}{x+1} =$

- A. $\frac{3}{4}$
- B. $-\frac{3}{2}$
- C. $\frac{9}{2}$
- D. $\frac{3}{2}$
- E. $-\frac{9}{2}$ *

10. $(3x^3y^2)^4 =$

- A. $81x^{12}y^8$ *
- B. $81x^7y^6$
- C. $12x^{12}y^8$
- D. $12x^7y^6$
- E. $9x^{12}y^8$

LEVEL 2

11. If $3 - 4y = 5x - 6$, then $y =$

- A. $-\frac{5x+9}{4}$
- B. $-\frac{5x-9}{4}$ *
- C. $-\frac{5}{4}x + 9$
- D. $-\frac{5}{4}x - 9$
- E. $-\frac{5x-3}{4}$

12. $(3x - 7y)^2 =$

- A. $9x^2 + 49y^2$
- B. $9x^2 - 21xy + 49y^2$
- C. $9x^2 - 42xy + 49y^2$ *
- D. $9x^2 - 49y^2$
- E. $6x^2 - 14y^2$

13. $\sqrt{8a^8} =$

- A. $4a^2$
- B. $4a^4$
- C. $2\sqrt{2}a^2$
- D. $2\sqrt{2}a^4$ *
- E. $4a^8$

14. $-3x^2y(xy^2 - 2y - 1) =$

- A. $-3x^2y^2 + 9x^2y$
- B. $-3x^3y^3 + 6x^2y^2 + 3x^2y$ *
- C. $-3x^3y^3 + 6x^2y^2 - 1$
- D. $-3x^3y^3 + 2y - 1$
- E. $-3x^3y^3 - 6x^2y^2 - 3x^2y$

15. $\frac{x^2+2x-3}{x^2-1} =$

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

16. The solution to $x^2 - x - 6 > 0$ is

- A. $-3 < x < 2$
- B. $x < -3$ or $x > 2$
- C. $-2 < x < 3$
- D. $x < -2$ or $x > 3$ *
- E. $x > 3$

17. The perimeter of a rectangle is nine times its width. If the width is 20, the length is

- A. 25
- B. 90
- C. 70 *
- D. 80
- E. 45

18. $\frac{1}{2x-y} - \frac{2}{x+2y} =$

- A. $\frac{-1}{x-3y}$
- B. $\frac{4y-3x}{2x^2-2y^2}$
- C. $\frac{3y-3x}{2x^2+3xy-2y^2}$
- D. $\frac{4y-3x}{2x^2+xy-2y^2}$
- E. $\frac{4y-3x}{2x^2+3xy-2y^2}$ *

19. If $f(x) = \frac{4x}{1-x}$ and $g(x) = \frac{2}{x}$, then $f(g(x)) =$

- A. $\frac{8}{x-2}$ *
- B. $\frac{8}{1-x}$
- C. 4
- D. $\frac{1-x}{2x}$
- E. $\frac{8(x-2)}{x^2}$

20. $\frac{\sqrt{a}}{1+\sqrt{a}} =$

- A. $\frac{\sqrt{a}+a}{1+a}$
- B. $\frac{\sqrt{a}-a}{1-a}$ *
- C. 1
- D. $\frac{\sqrt{a}-a}{1-a^2}$
- E. $\frac{a}{1+a}$