The University of Toledo

ELEMENTARY ALGEBRA PRACTICE TEST

This test consists of 20 questions. While you may take as much time as you wish, it is expected that you are able to complete it in about 45 minutes.

For proper course placement, please:

- Take the test seriously and honestly.
- Do your own work without any assistance. Do not use any reference matericals, calculator, or any other computing aid.
- Do not guess. If you don't know how to work a problem, leave the answer blank.

1. Simplify: $\dfrac{(-2)^2 - 4(-5)}{(-5) + 8}$

    A) 8   B) -2 C) $1/2$ D) $6/13$ E) Answer not given

2. Simplify: $\left(-3y^2\right)^2 \left(x^4\right)^3$

    A) $27x^9y^3$ B) $81x^9y^8$ C) $27x^9y^8$ D) $9y^4x^12$ E) Answer not given

3. Simplify: $\dfrac{5x - 2}{x - 4} - \dfrac{3x + 7}{x - 4}$

    A) $\dfrac{2x - 2}{x - 4}$ B) $\dfrac{2x - 9}{x - 4}$ C) $\dfrac{5x - 7}{x - 4}$ D) $\dfrac{8x - 2}{x - 4}$ E) Answer not given

4. Solve for a: $-(a + 8) = 5(a - 1) + 6$

    A) $12/3$ B) -2 C) $-3/2$ D) $10/3$ E) Answer not given

5. Simplify: $\left(8 - \sqrt{5}\right)\left(8 + \sqrt{5}\right) + 6$

    A) 8   B) 64   C) 65   D) 6   E) Answer not given

6. Name the quadrant in which the point $(2, -2)$ is located.

    A) I   B) II   C) III   D) IV   E) Answer not given

7. Solve for s: $-\dfrac{3}{8}s = \dfrac{5}{16}$

    A) $-6/5$ B) $5/6$ C) $-5/6$ D) $6/5$ E) Answer not given

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8. Simplify: $\sqrt{28} + 4\sqrt{63}$

   A) $3\sqrt{91}$ B) $11\sqrt{7}$ C) $14\sqrt{7}$ D) 6   E) Answer not given

9. Which of the following points are on the line: $3x + 4y = 6$?

   A) $(0,1)$ B) $(0,3/2)$ C) $(1,0)$ D) $(0,3/4)$ E) Answer not given

10. In the system of equations, find x: $2x + 3y = 6$ and $2x + 6y = 9$

    A) 1   B) -2 C) $3/2$ D) $6/13$ E) Answer not given

11. Divide and simplify: $\dfrac{9x^2 - 4}{12x^2 - 3x} \div \dfrac{6x + 4}{4x - 1}$

    A) $\dfrac{3x + 2}{6x}$ B) $\dfrac{3x - 2}{6x}$ C) $\dfrac{3x + 2}{3x}$ D) $\dfrac{4x + 2}{6x}$ E) Answer not given

12. Simplify: $\left(5a^2 + 6a - 8\right) - \left(4a^2 + 5a - 7\right)$

    A) $a^2 + a + 1$ B) $a^2 + 2a - 1$ C) $a^2 - a + 1$
    D) $a^2 + a - 1$ E) Answer not given

13. Tim can paint a room in 6 hours that Sara can paint in 3 hours. How long would it take the two of them working together to paint the room?

    A) 1.5 hr   B) 3 hr   C) 1/2 hr   D) 2 hr   E) Answer not given

14. Solve for x: $x^2 - 2x = -1$

    A) 1   B) -2 C) -1 D) $1, -1$ E) Answer not given

15. Simplify: $\left(\dfrac{ab}{c}\right)^{-2}$

    A) $\dfrac{c}{a^2 b^2}$ B) $\dfrac{c^2}{a^2 b^2}$ C) $\dfrac{a^2 b^2}{c}$ D) $\dfrac{ab}{c}$ E) Answer not given

16. One of the factors of $9a^2 + 18a + 8$ is

    A) $3a + 2$ B) $3a - 2$ C) $3a - 4$ D) $3a - 5$ E) Answer not given

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17. Find the y-intercept of the line $3x + 5y = 8$

   A) $-8/5$ B) $7/5$ C) $8/5$ D) 1 E) Answer not given

18. When graphing the system of equations $x + y = 16$ and $-x + y = 4$, the two lines would

   A) intersect at $(6, 10)$ B) be one line   C) be parallel
   D) intersect at $(10, 6)$ E) Answer not given

19. On a map 1 inch equals 120 miles. Based on this information, what is the mileage between two cities if the measurement is 9 inches?

   A) 960   B) 1080   C) 1070   D) 950   E) Answer not given

20. Multiply: $(2a + 1)(3a + 1)$

   A) $12a^2 + 7a + 5$ B) $11a^2 + 7a + 5$ C) $6a^2 + 5a + 1$
   D) $12a^2 + 7a - 5$ E) Answer not given

Solution:

1) A
2) D
3) B
4) C
5) C
6) D
7) C
8) C
9) B
10) C
11) B
12) D
13) D
14) A
15) B
16) A
17) C
18) A
19) B
20) C