

Mathcram.com Assessment

Instructions:

- Do not use any calculator
- Grade 8: Question 1 – 4 (5 minutes)
- Grade 9: Question 1 – 7 (10 minutes)
- Grade 10 or above: Question 1 – 15 (20 minutes)
- Email answers to lucas@mathcram.com with your email and/or phone number

1. Calculate $\frac{1}{2} + 3\frac{1}{3} \div \frac{5}{2}$

a. $1\frac{3}{5}$

b. $\frac{7}{6}$

c. $1\frac{5}{6}$

d. $\frac{1}{6}$

2. Calculate $0.4 + 3.5 \times 4.1 - 2.5$

a. 13.49

b. 12.25

c. 157.4

d. 28.25

3. What is 120% in decimal?

a. 1.2

b. 12

c. 120

d. 1200

4. What is $\frac{3}{5}$ in percent?

a. 3%

b. 6%

c. 30%

d. 60%

5. Solve for x:

$$4 + 2x = 10$$

- a. 2
- b. 5
- c. -3
- d. 3

6. What is the slope of the equation?

$$y = -4x + 3$$

- a. 4
- b. -4
- c. 3
- d. -3

7. What is the y-intercept of the equation?

$$-2y = 4x - 6$$

- a. -2
- b. 4
- c. -6
- d. 3

8. Solve the following system:

$$2x + y = 2$$

$$3x + 2y = 5$$

- a. $x = -1, y = 4$
- b. $x = 1, y = 4$
- c. $x = -1, y = -4$
- d. $x = -1, y = -4$

9. What is the diameter of the circle with the following equation?

$$x^2 + y^2 = 16$$

- a. 4
- b. 8
- c. 12
- d. 16

10. What is the midpoint, given the endpoints M(1,13) and N(9,-3)

- a. (-4, 8)
- b. (5, 5)
- c. (5, 8)
- d. (-4, 5)

11. Factor $x^2 - 7x + 10$

- a. $(x+5)(x-2)$
- b. $(x+5)(x+2)$
- c. $(x-5)(x+2)$
- d. $(x-5)(x-2)$

12. Factor $x^2 - 16$

- a. $(x+4)(x-4)$
- b. $(x+8)(x-8)$
- c. $(x+16)(x-16)$
- d. $(x+4)(x+4)$

13. What is the y-intercept of the equation?

$$y = x^2 - 7x + 10$$

- a. -7
- b. 7
- c. 10
- d. -10

14. Solve $x^2 = 9$

- a. 3
- b. 9
- c. -3
- d. ± 3

15. What is the quadratic formula for $ax^2 + bx + c = 0$?

a. $x = \frac{-b \pm \sqrt{b^2 + 4ac}}{2a}$

b. $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

c. $x = \frac{b \pm \sqrt{b^2 - 4ac}}{2a}$

d. $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2b}$