

# PLACEMENT TEST FOR ALGEBRA 2

Test 34 (Lesson 132), Form A

SHOW YOUR WORK

Name: \_\_\_\_\_

Solve the following quadratic equations by completing the square:

1.  $x^2 - 16 = 6x$

2.  $x^2 + 1 = 3x$

3.  $x^2 = 9 - 7x$

Use the quadratic formula to solve the following quadratic equations:

4.  $3x = 4 - x^2$

5.  $2x^2 - 6 = 3x$

6. A single six-sided die is rolled three times. What is the probability that a 6 will appear all three times?

Factor the following trinomials:

7.  $3x^2 + x - 14$

8.  $15 + 2x^2 - 11x$

Factor by grouping:

9.  $xy - 2a - 2x + ay$

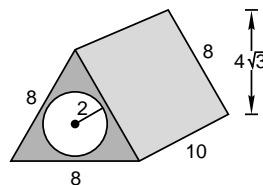
10.  $2amn - 6n - 3m + am^2$

11. The number of green beads varied inversely as the square of the number of yellow beads. When there were 8 greens, there were 5 yellows. How many greens would there be if there were 10 yellows?

12. Simplify:  $\frac{3\sqrt{3} + \sqrt{3}}{\sqrt{3}}$

13. Find the equation of the line through  $(3, -6)$  that is parallel to  $y = \frac{2}{3}x + 3$ .

14. A cylinder whose radius is 2 inches is removed from the right prism as shown. The ends of the prism have the shape of an equilateral triangle whose sides are 8 inches long. Find the volume of the remaining solid in cubic inches. Dimensions are in inches.



15. Solve:  $\sqrt{3m - 5} - 4 = -3$

16. Graph on a number line:  $5 \leq x + 3 < 7$ ;  $D = \{\text{Reals}\}$

17. Melinda walked to the mall at 4 miles per hour and then rode back home in a bus at 24 miles per hour. If her total traveling time was 14 hours, how far was it to the mall?

18. Scott and Heather cut a 160-foot cord into two lengths. The ratio of the lengths was 7 to 1. How long was each length?

19. Simplify:  $(5 + 2\sqrt{3})(\sqrt{3} - 3)$

20. Solve:  $\frac{5x}{2} - \frac{x-2}{3} = 7$

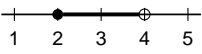
If your student scores a 70+, they are ready for [Shormann Algebra 2](#).

If the students scores less than 70, they should take [Shormann Algebra 1](#).

Learn more: [Student Struggled in Algebra 1 or Geometry](#)

TEST ANSWERS

TEST 34, FORM A

1. 8, -2
2.  $\frac{3}{2} \pm \frac{\sqrt{5}}{2}x$
3.  $-\frac{7}{2} \pm \frac{\sqrt{85}}{2}$
4. 1, -4
5.  $\frac{3}{4} \pm \frac{\sqrt{57}}{4}$
6.  $\frac{1}{216}$
7.  $(3x + 7)(x - 2)$
8.  $(2x - 5)(x - 3)$
9.  $(x + a)(y - 2)$
10.  $(am - 3)(2n + m)$
11. 2
12. 4
13.  $y = \frac{2}{3}x - 8$
14. 151.53 in.<sup>3</sup>
15. 2
16. 
17. 48 miles
18. 140 ft, 20 ft
19.  $-9 - \sqrt{3}$
20.  $\frac{38}{13}$