Name _____ Date _____

8.5 Puzzle Time

What Did One Wall Say To The Other Wall?

Write the letter of each answer in the box containing the exercise number.

Find the vertex and the axis of symmetry of the graph of the function.

1. $y = x^2 - 16$

2. $f(x) = x^2 - 10x$

3. $r(x) = x^2 + 7x + 12$

4. $y = 3x^2 - 18x + 24$

Find the zeros of the function.

5. $s(x) = -3(x - 3)(x - 9)$

6. $h(x) = \frac{1}{6}(x + 4)(x - 12)$

7. $y = x^2 - 17x + 30$

8. $g(x) = -4x^2 + 12x + 72$

9. $y = x^3 - 144x$

10. $c(x) = (x + 14)(x^2 - 49)$

11. $v(x) = x^3 - x^2 - 16x + 16$

12. $k(x) = x^3 + 5x^2 - 4x - 20$

Write a quadratic function in standard form whose graph satisfies the given condition(s).

13. vertex: $(-9, -4)$

14. x-intercepts: -8 and 5

15. passes through $(-3, 0)$, $(4, 0)$, $(2, 20)$

16. passes through $(-3, 0)$, $(7, 0)$, $(6, -36)$

17. Write a cubic function in standard form whose graph has x-intercepts of -4, -2, and 6.

18. Write a cubic function in standard form whose graph has x-intercepts of -8, 1, and 5.

Answers

T. $(5, -25); x = 5$

O. $\left(-\frac{7}{2}, -\frac{1}{4}\right); x = -\frac{7}{2}$

M. $(3, -3); x = 3$

E. $(0, -16); x = 0$

R. $(-4, 0), (12, 0)$

Y. $(2, 0), (15, 0)$

O. $(-3, 0), (6, 0)$

H. $(3, 0), (9, 0)$

U. $(-4, 0), (1, 0), (4, 0)$

E. $(-12, 0), (0, 0), (12, 0)$

C. $(-5, 0), (-2, 0), (2, 0)$

T. $(-14, 0), (-7, 0), (7, 0)$

A. $f(x) = -2x^2 + 2x + 24$

N. $f(x) = x^3 + 2x^2 - 43x + 40$

E. $f(x) = x^2 + 3x - 40$

R. $f(x) = x^3 - 28x - 48$

E. $f(x) = x^2 + 18x + 77$

T. $f(x) = 4x^2 - 16x - 84$

4	13	9	16		7	3	11		15	2		10	5	14		12	8	6	18	1	17