NAME:_____

5.4 Factoring with Special Cases

Multiply

Factor

Difference of Squares

Ex 1:

Ex 2:

Multiply

Factor

Perfect Square Trinomials

Ex 3:

Ex 4:

Ex 5:

Ex 6:

Ex 7:

Ex 8: Solve and Sketch.

Ex 9: Find the zeroes and sketch.

YOU TRY:

1) Factor:

2) Factor:

3) Find the zeroes and sketch:

Summarize your notes:

5.4 Practice Problems

Directions: Factor each completely.		
1) $v^2 - 12n + 36$	2) $16r^2 - 40r + 25$	3) $-36x^2 + 49$
4) $6v^2 + 90v + 300$	5) $5x^2 - 20$	6) $75x^3 - 30x^2 + 3x$
7) $2r^2 - 4r + 2$	8) $18x^2 - 38x - 48$	9) $-9x^3 + 16x$

Directions: Solve each equation. Sketch it.	
10) $4v^2 = 1$	11) $25b^2 = -10b - 1$

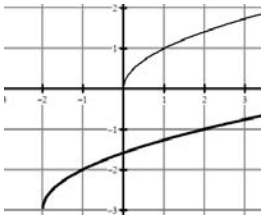
12) $12v^2 - 18v = 0$	13) $245x^2 + 45 = -210x$

Directions: Find the zeroes of the function, then sketch the quadratic.

14) $f(x) = 5x^2 - 15x - 270$	15) $h(x) = 50x^2 + 80x + 32$	16) $g(x) = 5x^2 - 45$

Algebra Skillz

Below, the graph of $f(x) = \sqrt{x+2} - 3$ is sketched in bold. Its parent function $f(x) = \sqrt{x}$ is represented by the thin curve.



1) Describe the translation of the parent graph.

2) How does the translation relate to the equation?

3) $4\sqrt{54} - 4\sqrt{24}$

4) $-2\sqrt{7}(10\sqrt{7} - \sqrt{14})$

5) Solve:
(x + 4)(7x - 1) = 0

6) Factor and solve.
$x^2 - 9x + 8 = 0$

5.4 Application and Extension

1) Factor: $12x^2 - 18$

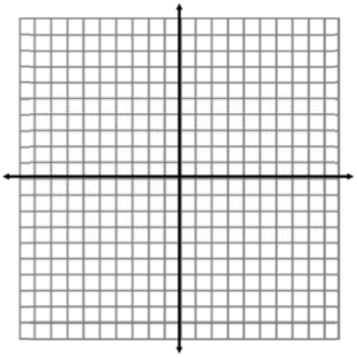
2) Solve and sketch. $-g^2 + 24g = 144$

3) For the following use the function, $f(x) = x^2 + 10x + 25$

a) Find the zeroes. Plot them on the graph.

b) Find the axis of symmetry and vertex using the formula from 5.2. Graph the quadratic.

c) What is true about the vertex and zeroes of the quadratic?

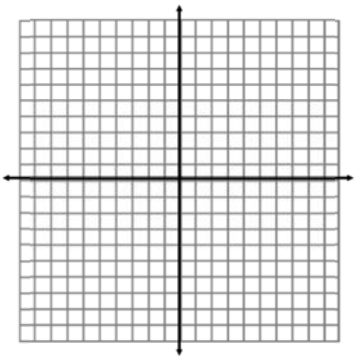


4) For the following use the function, $g(x) = x^2 - 12x + 36$

a) Find the zeroes. Plot them on the graph.

b) Find the axis of symmetry and vertex using the formula from 5.2. Graph the quadratic.

c) What is true about the vertex and zeroes of any perfect square trinomial?

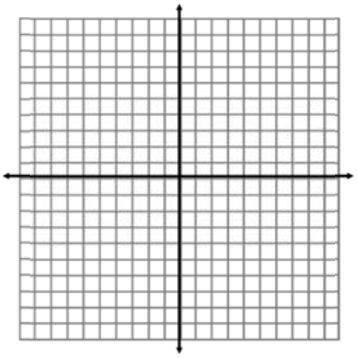


5) For the following use the function, $h(x) = x^2 - 9$

a) Find the zeroes. Plot them on the graph.

b) Find the axis of symmetry and vertex using the formula from 5.2. Graph the quadratic.

c) What will be the axis of symmetry for any difference of squares? Why?



SAT PREP Below are sample SAT questions. The SAT is the main standardized test that colleges look at for admission. One is multiple choices; the other is free response where you must grid in your answer. Blow it up.

MULITPLE CHOICE

Which of the following cannot be factored using perfect square trinomials or difference of squares?

(A) $y = x^2 - 576$
(B) $y = x^2 + 64x + 1024$
(C) $y = 2x^2 - 450$
(D) $y = 9x^2 - 15x + 25$

GRID IN

X = ? for the axis of symmetry of the function, $f(x) = 4x^2 - 20x + 25$