Warm-up: Fix Typo! Then Factor

7) $x^2 - 13x + 36$

Class Plan:

1. Warm-up
2. Study Unit 6 Quadratics
   - Expansion
   - Factorization
   - Critical Points
   - Solving Quadratic Equations

Unit 5: Exponentials

Warm-up:

Think of a team name for your table.

TEAM 1

TEAM 2

TEAM 3

TEAM 4

TEAM 5

TEAM 6

Trashketball

Trashketball

1. Work together to put 1 solution on your board, **wait** to hold it up until told.

2. Table correct? **1 point.**

3. Every **2 points**, a person from the ***table*** gets to shoot for 1, 2 or 3 bonus points

4. Teacher is the judge - if you are taking too long - or losing focus - you lose your shot :) Stay on your game!

Chapter 4: Algebraic Expansion

Expand the quadratic expressions.

1) $2x(x-3)$

2) $-4x(3x-1)$

Expansion

Chapter 4: Algebraic Expansion

Expand the quadratic expressions.

3) $(x+12)(x-3)$

Expansion

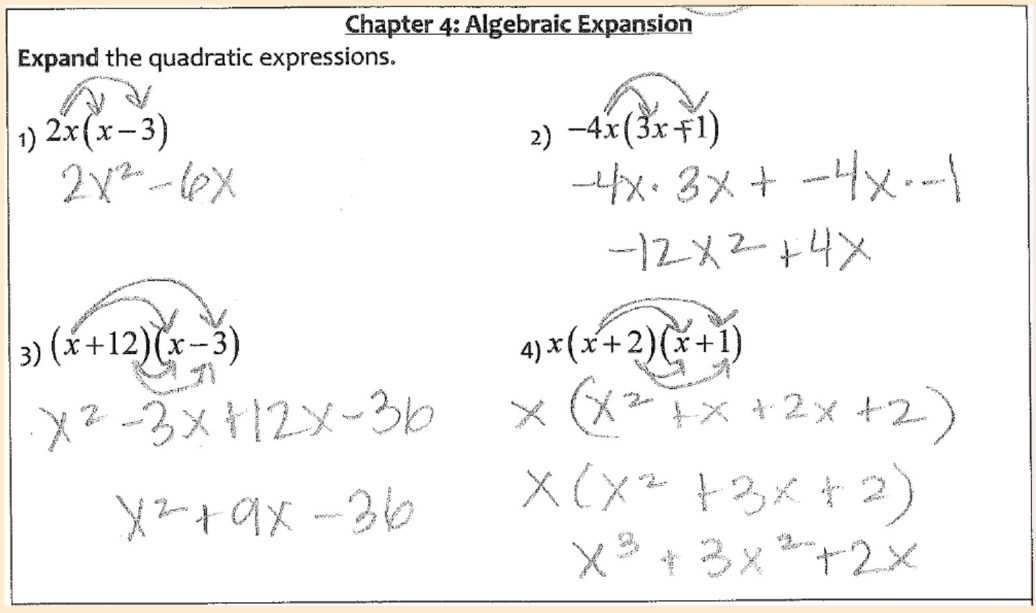
Chapter 4: Algebraic Expansion

Expand the quadratic expressions.

4) $x(x+2)(x+1)$

Expansion

Expansion



Chapter 4: Algebraic Expansion

Expand the quadratic expressions.

1) $2x(x-3)$

$2x^2 - 6x$

2) $-4x(3x+1)$

$-4x \cdot 3x + -4x \cdot -1$

$-12x^2 + 4x$

3) $(x+12)(x-3)$

$x^2 - 3x + 12x - 36$

$x^2 + 9x - 36$

4) $x(x+2)(x+1)$

$x(x^2 + x + 2x + 2)$

$x(x^2 + 3x + 2)$

$x^3 + 3x^2 + 2x$

Chapter 9: Quadratic Factorization

Factor the quadratic expressions.

5) $2x^2 - 6x$

6) $x^2 + 16x + 64$

Factorization

Chapter 9: Quadratic Factorization

Factor the quadratic expressions.

7) $x^2 - 13x + 36$

8) $x^2 - 36$

Factorization

Chapter 9: Quadratic Factorization

Factor the quadratic expressions.

7) $x^2 - 13x + 36$

8) $x^2 - 36$

Factorization

Factorization

Chapter 9: Quadratic Factorization

Factor the quadratic expressions.

5) $2x^2 - 6x$ what do they have in common?

$2x(x-3)$

6) $x^2 + 16x + 64$

$(x+8)(x+8)$

$(x+8)^2$

7) $x^2 - 12x + 36$

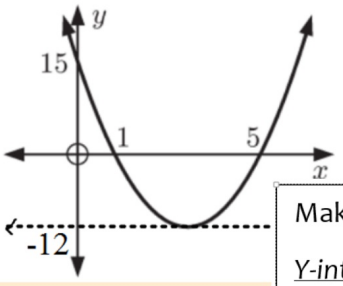
$(x-4)(x-9)$

8) $x^2 - 36$

$x^2 + 0x - 36$

$(x-6)(x+6)$

9) Find critical points from the graph.



Make sure to write all points as an ordered pair: *(x, y)*

Y-intercept: *x*-intercepts:

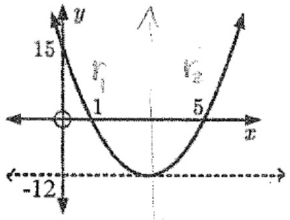
Vertex:

Critical Points

Critical Points

Chapter 21: Quadratic Functions

9) Find critical points from the graph.



Make sure to write all points as an ordered pair: (x, y)

y-intercept: (0,15)

x-intercepts: (1,0) (5,0)

Vertex:

$x = \frac{r_1 + r_2}{2} = \frac{1+5}{2} = \frac{6}{2} = 3$ (3,-12)

Solve for x.

10) $-4x^2 = -144$

11) $(x+2)^2 - 5 = 20$

Solving Quadratic Equations

Solve for x.

12) $(x-5)(2x+1)=0$

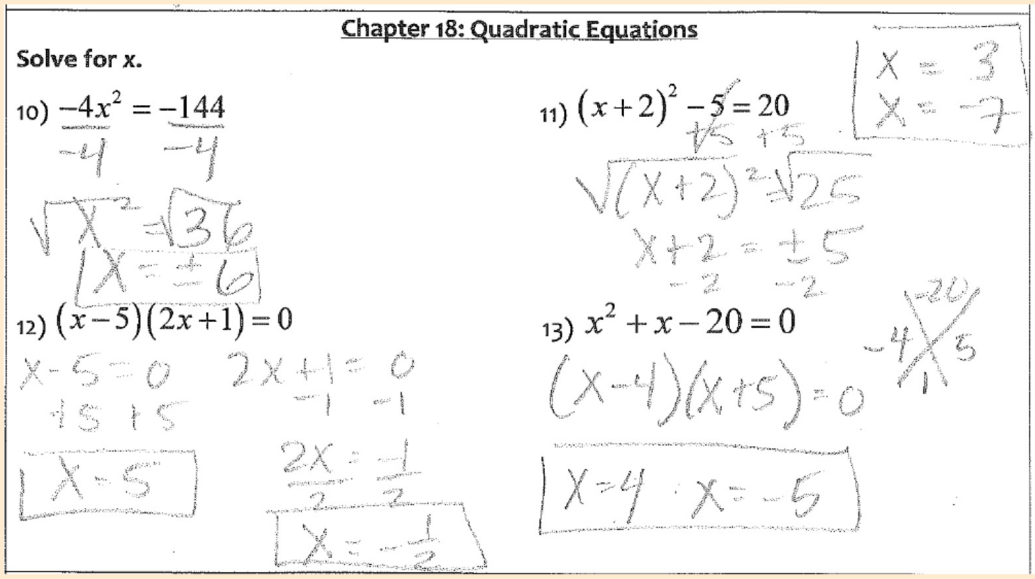
Solving Quadratic Equations

Solve for x.

13) $x^2 + x - 20 = 0$

Solving Quadratic Equations

Solving Quadratic Equations



Chapter 18: Quadratic Equations

Solve for x.

10) $-4x^2 = -144$

$-4 \quad -4$

$\sqrt{x^2} = \sqrt{36}$

$x = \pm 6$

11) $(x+2)^2 - 5 = 20$

$+5 \quad +5$

$\sqrt{(x+2)^2} = \sqrt{25}$

$x+2 = \pm 5$

$-2 \quad -2$

$x = 3$

$x = -7$

12) $(x-5)(2x+1) = 0$

$x-5=0 \qquad 2x+1=0$

$+5 \quad +5 \qquad -1 \quad -1$

$x = 5 \qquad \frac{2x}{2} = \frac{-1}{2}$

$x = -\frac{1}{2}$

13) $x^2 + x - 20 = 0$

$(x-4)(x+5) = 0$

$-4 \times 5 = -20$

$-4 + 5 = 1$

$x = 4 \quad x = -5$

14) A student drops an egg during physics class. The height of the (**meters**) egg depends on the time it is in the air (**seconds**). This is modeled by $h = -9.8\left(x^2 + 2x - 24\right)$

a) What is the height that the egg is dropped from? (Show work using the equation).

0 sec $h = -9.8(0^2 + 2(0) - 24)$

$h = -9.8(-24)$ $h = 235.2$ m

b) When will the egg hit the ground? (Show work using the equation).

$\frac{0}{-9.8} = \frac{-9.8(x^2 + 2x - 24)}{-9.8}$ $0 = (x+6)(x-4)$

$0 = x^2 + 2x - 24$ $x = -6$ $x = 4$ sec

-24, -4, 6, 2

Exercises... Study!

Finish Review Worksheet

Unit 6 Test Tomorrow