

Name: Key

Factoring Practice / Day

Use your foldable to help you identify which type of factoring to use, and factor each problem completely

1) $63n^3 + 54n^2 - 105n - 90$ (GCF)

$3(21n^3 + 18n^2 - 35n - 30)$

$3(21n^3 + 18n^2) + (-35n - 30)$

$3(n^2)(7n+6) + -5(7n+6)$

$3(3n^2 - 5)(7n+6)$

2) $21k^3 - 84k^2 + 15k - 60$

$3(7k^3 - 28k^2 + 5k - 20)$

$3(-7k^3 - 28k^2) + -(5k - 20)$

$3(-7k^2)(k-4) + 5(k-4)$

$3(7k^2 + 5)(k-4)$

3) $y^2 - 16$

$(y-4)(y+4)$

4) $12x^2 - 75$

$3(4x^2 - 25)$

$3(2x+5)(2x-5)$

5) $x^2 + 8x + 16$

$(x+4)(x+4)$

$(x+4)^2$

6) $a^2 - 10a + 25$

$(a-5)(a-5)$

7) $9x^2 - 6x + 1$

$9x^2 - 3x - 3x + 1$

$3x(3x-1) - 1(3x-1)$

$(3x-1)(3x-1)$

$(3x-1)^2$

8) $2x^2 - 5x - 3$

$2x^2 - 6x + (x-3)$

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

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

9) $5n^2 + 7n - 5n - 7$

$5n^2 + 7n - 5n - 7$

$(5n^2 + 7n) + (-5n - 7)$

$n(5n+7) - 1(5n+7)$

$(n-1)(5n+7)$

10) $6v^3 - 16v^2 + 21v - 56$

$(6v^3 - 16v^2) + (21v - 56)$

$2v^2(3v-8) + 7(3v-8)$

$(2v^2+7)(3v-8)$

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Factoring Practice | Da

11) $9x^4 - 4$

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

14) $x^2 - 1$

$$(x - 1)(x + 1)$$

12) $25m^2 - n^2$

$$(5m - n)(5m + n)$$

15) $4 - 12y + 9y^2$

$$9y^2 - 12y + 4$$

$$\begin{array}{r|l} 36 & -12 \\ -6 & -6 \end{array}$$

$$(3y - 2)(3y - 2)$$

$$3y(3y - 2) - 2(3y - 2)$$

$$(3y - 2)(3y - 2)$$

$$(3y - 2)^2$$

13) $(2x^3 + 2x^2) - (30x - 5)$

$$2x^2(6x + 1) - 5(6x + 1)$$

$$(2x^2 - 5)(6x + 1)$$

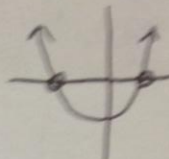
Name: Solution Station

1) What are the four methods of determining the roots of a quadratic?

quadratic formula, factoring, graphing, completing the square

2) What is a root of a quadratic? In other words, where is it or how do you find it on a graph? Draw a picture to support your statement.

where it crosses the x-axis
where $y=0$



3) What are terms that are synonyms with roots?

solutions zeroes
x-intercepts

Factoring Practice

1) When factoring, what must you ALWAYS check for first?

GCF!

2) $3x^2 - 2x - 5$

$$\begin{array}{r} -5 \quad 15 \\ \times \quad 3 \\ \hline 3x^2 + 3x + 5x - 5 \\ \hline 3x(x+1) + 5(x-1) \\ = (3x-5)(x+1) \end{array}$$

3) $2x^2 + 3x - 9$

$$\begin{array}{r} -18 \\ \times \quad 3 \\ \hline (2x^2 - 3x) + (6x - 9) \\ \hline x(2x-3) + 3(2x-3) \\ = (x+3)(2x-3) \end{array}$$

4) $3x^2 - 8x + 4$

$$\begin{array}{r} 2 \quad 12 \\ \times \quad -6 \\ \hline (3x^2 - 2x) + (6x + 4) \\ \hline x(3x-2) + -2(3x-2) \\ = (x-2)(3x-2) \end{array}$$

5) $7x^2 + 53x + 28$

$$\begin{array}{r} 7 \quad 14 \\ \times \quad 4 \\ \hline (7x^2 + 49x) + (4x + 28) \\ \hline 7x(x+7) + 4(x+7) \\ = (7x+4)(x+7) \end{array}$$