 Name_____

Solving Quadratic Equations By Factoring

Date_____ Period____

Solve each equation by factoring.

1) $(3n - 2)(4n + 1) = 0$

2) $m(m - 3) = 0$

3) $(5n - 1)(n + 1) = 0$

4) $(n + 2)(2n + 5) = 0$

5) $3k^2 + 72 = 33k$

6) $n^2 = -18 - 9n$

7) $7v^2 - 42 = -35v$

8) $k^2 = -4k - 4$

9) $-2v^2 - v + 12 = -3v^2 + 6v$

10) $-4n^2 + 6n - 16 = -5n^2$

11) $8r^2 + 3r + 2 = 7r^2$

12) $b^2 + b = 2$

13) $10n^2 - 35 = 65n$

14) $3x^2 - 8x = 16$

15) $16n^2 - 114n = -14$

16) $28n^2 = -96 - 184n$

17) $7a^2 + 32 = 7 - 40a$

18) $42x^2 - 69x + 20 = 7x^2 - 8$

Critical thinking questions. True/False.

19) If a quadratic equation can be factored and each factor contains only real numbers then there cannot be an imaginary solution.

20) If a quadratic equation cannot be factored then it will have at least one imaginary solution.

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1) $(3n - 2)(4n + 1) = 0$

$\left\{\frac{2}{3}, -\frac{1}{4}\right\}$

2) $m(m - 3) = 0$

$\{3, 0\}$

3) $(5n - 1)(n + 1) = 0$

$\left\{\frac{1}{5}, -1\right\}$

4) $(n + 2)(2n + 5) = 0$

$\left\{-2, -\frac{5}{2}\right\}$

5) $3k^2 + 72 = 33k$

$\{3, 8\}$

6) $n^2 = -18 - 9n$

$\{-6, -3\}$

7) $7v^2 - 42 = -35v$

$\{-6, 1\}$

8) $k^2 = -4k - 4$

$\{-2\}$

9) $-2v^2 - v + 12 = -3v^2 + 6v$

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11) $8r^2 + 3r + 2 = 7r^2$

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$\left\{-\frac{1}{2}, 7\right\}$

14) $3x^2 - 8x = 16$

$\left\{-\frac{4}{3}, 4\right\}$

15) $16n^2 - 114n = -14$

$\left\{\frac{1}{8}, 7\right\}$

16) $28n^2 = -96 - 184n$

$\left\{-\frac{4}{7}, -6\right\}$

17) $7a^2 + 32 = 7 - 40a$

$\left\{-\frac{5}{7}, -5\right\}$

18) $42x^2 - 69x + 20 = 7x^2 - 8$

$\left\{\frac{7}{5}, \frac{4}{7}\right\}$

Critical thinking questions. True/False.

19) If a quadratic equation can be factored and each factor contains only real numbers then there cannot be an imaginary solution.

True

20) If a quadratic equation cannot be factored then it will have at least one imaginary solution.

False (Example, $x^2 = 10$)