12-4 Solving Some Quadratics by Factoring

Warm-Up

Factor

1. $5x^3 - 20x^2 + 20x$

$5x(x^2 - 4x + 4)$ (F)

$5x(x - 2)(x - 2)$

1, 4

$-2, -2$

Algebra 12-4 Solving Some Quadratics by Factoring

Word	Definition	Example
Zero Product Property	zero times any # gives zero.	$x \cdot y = 0$ $x = 0$ or $y = 0$

How to Use the Zero Product Property to Solve Quadratics

1. Is the equation in standard form? $ax^2+bx+c=0$

2. Factor - (1) GCF (2) ( )( )

1. Set each factor equal to 0 and solve.

Solve.

1. $r^2 - 11r - 12 = 0$

F L

1, −12
2, 6
3, 4

$(r+1)(r-12) = 0$

$r+1=0$ $\quad r-12=0$

$-1\ -1$ $\quad +12\ +12$

$r = -1$ $\quad r = 12$

2. $10t^3 + 80t^2 - 200t = 0$

F L

1, 20
−2, +10
4, 5

$10t(t^2 + 8t - 20) = 0$

$10t(t+10)(t-2) = 0$

$\frac{10t}{10} = \frac{0}{10}$ $\quad t+10=0$ $\quad t-2=0$

$-10\ -10$ $\quad +2\ +2$

$t = 0$ $\quad t = -10$ $\quad t = 2$

Assignment: 12-4 #'s 3-9, 14-22, 26-28

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