10.5 Solve Quadratics with Factoring

PRACTICE

Directions: Solve the equation.

1) $8t^2 - 2t = 3$

$-3 \quad -3$

$8t^2 - 2t - 3 = 0$ $\quad X -24,\ +2$

$(8t-6)(8t+4) = 0$

$\frac{(8t-6)(8t+4)}{8} = 0$

$\frac{2(4t-3)\ 4(2t+1)}{8} = 0$

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

$4t-3=0$ / $+3 \quad +3$ / $\frac{4t}{4} = \frac{3}{4}$ / $t = \frac{3}{4}$

OR

$2t+1=0$ / $2t=-1$ / $t=-\frac{1}{2}$

2) $n^2 - 64 = 0$ $\quad X -64,\ +0$

$(n-8)(n+8) = 0$

$n-8=0$ or $n+8=0$

$n=8$ or $n=-8$

3) $2x^2 - 3x - 35 = 0$ $\quad X -70,\ +-3$

$\frac{(2x-10)(2x+7)}{2} = 0$

$\frac{2(x-5)\ 1(2x+7)}{2} = 0$

$(x-5)(2x+7) = 0$

$x-5=0$ OR $2x+7=0$ / $-7 \quad -7$ / $\frac{2x}{2} = \frac{-7}{2}$

$x=5$ / $x=-\frac{7}{2}$

4) $a^2 = 50 - 5a$

$+5a \quad +5a$

$a^2 + 5a = 50$

$-50 \quad -50$

$a^2 + 5a - 50 = 0$ $\quad X -50,\ +5$

$(a+10)(a-5) = 0$

$a+10=0$ or $a-5=0$

$a=-10$ / $a=5$

5) $s(s+1) = 72$

$s^2 + s = 72$

$-72 \quad -72$

$s^2 + s - 72 = 0$ $\quad X -72,\ +1$

$(s+9)(s-8) = 0$

$s+9=0$ or $s-8=0$

$s=-9$ / $s=8$

6) $p(3p+14) = 5$

$3p^2 + 14p = 5$

$-5 \quad -5$

$3p^2 + 14p - 5 = 0$ $\quad X -15,\ +14$

$\frac{(3p+15)(3p-1)}{3} = 0$

$\frac{3(p+5)\ 1(3p-1)}{3} = 0$

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

$p+5=0$ / $p=-5$

OR

$3p-1=0$ / $3p=1$ / $p=\frac{1}{3}$

Directions: Find the zeroes of the polynomial function.

7) $f(x) = x^2 - 12x + 35$ $\quad X 35,\ +-12$

$0 = x^2 - 12x + 35$

$0 = (x-7)(x-5)$

$0 = x-7$ or $0 = x-5$

$x=7$ / $x=5$

8) $g(x) = 3x^2 + x - 14$ $\quad X -42,\ +1$

$0 = 3x^2 + x - 14$

$0 = \frac{(3x+7)(3x-6)}{3}$

$0 = \frac{1(3x+7)\ 3(x-2)}{3} = 0 = (3x+7)(x-2)$

$3x+7=0$ / $3x=-7$ / $x=-\frac{7}{3}$

or

$x-2=0$ / $x=2$

9) $f(x) = 6x^2 - 11x + 3$

$0 = 6x^2 - 11x + 3$

$0 = \frac{(6x-9)(6x-2)}{6} = \frac{3(2x-3)2(3x-1)}{6}$

$0 = (2x-3)(3x-1)$

$0 = 2x-3$ or $0 = 3x-1$

$3 = 2x$ $1 = 3x$

$\frac{3}{2} = x$ $\frac{1}{3} = x$

10) $h(x) = x^2 + 10x - 39$

$0 = x^2 + 10x - 39$

$0 = (x+13)(x-3)$

$0 = x+13$ or $0 = x-3$

$-13 = x$ or $3 = x$

11) $g(x) = x^2 - 14x - 51$

$0 = x^2 - 14x - 51$

$0 = (x-17)(x+3)$

$0 = x-17$ or $0 = x+3$

$17 = x$ $-3 = x$

12) $j(x) = 9x^2 - 4$

$0 = 9x^2 - 4$

$0 = \frac{(9x-6)(9x+6)}{9} = \frac{3(3x-2)3(3x+2)}{9}$

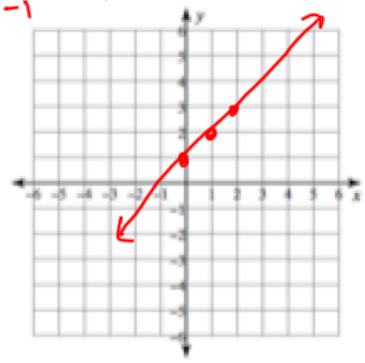
$0 = (3x-2)(3x+2)$

$0 = 3x-2$ or $0 = 3x+2$

$2 = 3x$ $-2 = 3x$

$\frac{2}{3} = x$ $-\frac{2}{3} = x$

SKILLZ REVIEW

Graph.	List all pairs of numbers that multiply to the given number.	Which number pair contains the largest perfect square?
1) $x - y = -1$ $-x \quad -x$ $-y = -x - 1$ $-1 \quad -1$ $y = x + 1$ 	2) 64 1, 64 2, 32 4, 16 8, 8	3) Use 64 1, 64 8, 8