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SOLVE EQUATIONS BY FACTORING: Worksheet 2

Solve each equation by factoring.

1) $t^2 + 7t = 18$

2) $r^2 + 5r + 4 = 0$

3) $x^2 = 121$

4) $3b^2 - 36 = -12b$

5) $y^2 - 16 = 0$

6) $7q^2 - 21q + 14 = 0$

7) $4x^3 - 16x = 0$

8) $5w^2 - 20w = -15$

9) $d^2 + 13d + 22 = 0$

10) $36c^2 = 25$

11) $x^2 - 9x = 0$

12) $2w^2 + 4w - 6 = 0$

13) $b^2 - 2w - 24 = 0$

14) $4y^2 - 1 = 0$

15) $2x^2 - 50 = 0$

16) $t^2 + 10t = -24$

17) $-2a^2 - 10a - 12 = 0$

18) $f^2 - 4f = 12$

19) $r^2 - 2r - 63 = 0$

20) $10e^2 + 70e + 100 = 0$

KEY

SOLVE EQUATIONS BY FACTORING: Worksheet 2

Solve each equation by factoring.

1) $t^2 + 7t = 18$

$t^2 + 7t - 18 = 0$
$(t + 9)(7 - 2) = 0$
$\{-9,2\}$

2) $r^2 + 5r + 4r = 0$

$(r + 4)(r + 1) = 0$
$\{-4,-1\}$

3) $x^2 = 121$

$x^2 - 121 = 0$
$(x + 11)(x - 11) = 0$
$\{-11,11\}$

4) $3b^2 - 36 = -12b$

$3b^2 + 12b - 36 = 0$
$3(b^2 + 4b - 12) = 0$
$3(b + 6)(b - 2) = 0$
$\{-6,2\}$

5) $y^2 - 16 = 0$

$(y + 4)(y - 4) = 0$
$\{-4,4\}$

6) $7q^2 - 21q + 14 = 0$

$7(q^2 - 3q + 2) = 0$
$7(q - 1)(q - 2) = 0$
$\{1,2\}$

7) $4x^3 - 16x = 0$

$4x(x^2 - 4) = 0$
$4x(x + 2)(x - 2) = 0$
$\{-2,0,2\}$

8) $5w^2 - 20w = -15$

$5w^2 - 20w + 15 = 0$
$5(w^2 - 4w + 3) = 0$
$5(w - 1)(w - 3) = 0$
$\{1,3\}$

9) $d^2 + 13d + 22 = 0$

$(d + 11)(d + 2) = 0$
$\{-11,-2\}$

10) $36c^2 = 25$

$36c^2 - 25 = 0$
$(6c + 5)(6c - 5) = 0$
$\left\{-\frac{5}{6}, \frac{5}{6}\right\}$

11) $x^2 - 9x = 0$

$x(x-9) = 0$
$\{0,9\}$

12) $2w^2 + 4w - 6 = 0$

$2(w^2 + 2w - 3) = 0$
$2(w+3)(w-1) = 0$
$\{-3,1\}$

13) $b^2 - 2b - 24 = 0$

$(b+4)(b-6) = 0$
$\{-4,6\}$

14) $4y^2 - 1 = 0$

$(2y+1)(2y-1) = 0$
$\left\{-\frac{1}{2}, \frac{1}{2}\right\}$

15) $2x^2 - 50 = 0$

$2(x^2 - 25) = 0$
$2(x+5)(x-5) = 0$
$\{-5,5\}$

16) $t^2 + 10t = -24$

$t^2 + 10t + 24 = 0$
$(t+6)(t+4) = 0$
$\{-6,-4\}$

17) $-2a^2 - 10a - 12 = 0$

$-2(a^2 + 5a + 6) = 0$
$-2(a+3)(a+2) = 0$
$\{-3,-2\}$

18) $f^2 - 4f = 12$

$f^2 - 4f - 12 = 0$
$(f+2)(f-6) = 0$
$\{-2,6\}$

19) $r^2 - 2r - 63 = 0$

$(r+7)(r-9) = 0$
$\{-7,9\}$

20) $10e^2 + 70e + 100 = 0$

$10(e^2 + 7e + 10) = 0$
$10(e+5)(e+2) = 0$
$\{-5,-2\}$