

Homework

1) Solve and Check:

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

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

$r-7=0$ $+7+7$	$r-5=0$ $+5+5$
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$r=7$	$r=5$
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$$\{5, 7\}$$

Check #1

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

$$7^2 - 12(7) + 35 = 0$$

$$49 - 84 + 35 = 0$$

$$0 = 0$$

Check #2

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

$$5^2 - 12(5) + 35 = 0$$

$$25 - 60 + 35 = 0$$

$$0 = 0$$

2) Solve:

$$6y^2 + 18y = -12$$

$$+12 \quad +12$$

$$6y^2 + 18y + 12 = 0$$

$$6(y^2 + 3y + 2) = 0$$

$$6(y+2)(y+1) = 0$$

$6 \neq 0$	$y+2=0$ $-2-2$	$y+1=0$ $-1-1$
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$y = -2$	$y = -1$
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$$\{-2, -1\}$$

3) Solve:

$$\frac{x+5}{x+1} = \frac{x-1}{4}$$

$$x \neq -1$$

$$4(x+5) = (x+1)(x-1)$$

$$4x+20 = x^2 - x + x - 1$$

$$4x+20 = x^2 - 1$$

$$-4x - 20 \quad -4x - 20$$

$$0 = x^2 - 4x - 21$$

$$x^2 - 4x - 21 = 0$$

$$(x-7)(x+3) = 0$$

$$\{-3, 7\}$$

$x-7=0$ $+7+7$	$x+3=0$ $-3-3$
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$x=7$	$x=-3$
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4) Solve:

$$d^2 - 2d = 0$$

$$d(d-2) = 0$$

$$d=0$$

$$d-2=0$$

$$+2+2$$

$$d=2$$

$$\{0, 2\}$$

5) Solve:

$$x^2 - 24 = 0$$

$$+24 \quad +24$$

$$\sqrt{x^2 - 24}$$

$$\sqrt{4 \cdot 6}$$

$$x = \pm 2\sqrt{6}$$

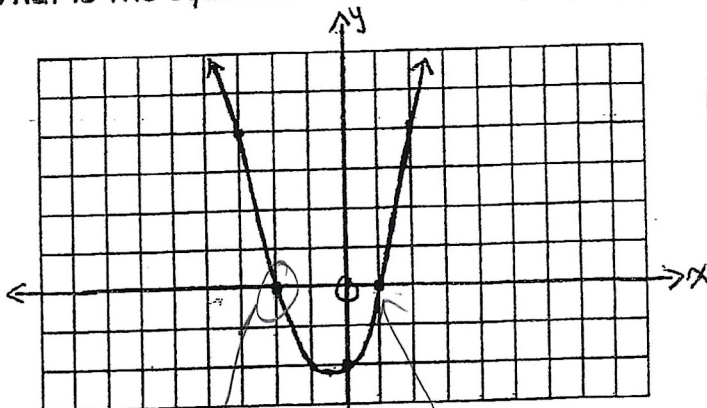
$$\{-2\sqrt{6}, 2\sqrt{6}\}$$

6) What are the roots of the equation $(x-8)(x+5) = 0$?

$x-8=0$ $+8+8$	$x+5=0$ $-5-5$
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$x=8$	$x=-5$
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7) What is the equation for the accompanying graph?



$$x = -2$$

$$x = 1$$

$$f(x) = x^2 + x - 2$$

$$y = x^2 + x - 2$$

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

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

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

$$x = -2 \quad x = 1$$