Algebra 1 Name Answer Key

Homework 35.1

Solve each equation by factoring.

1) $r^2 - r - 30 = 0$

$(r+5)(r-6)=0$

$r+5=0$ OR $r-6=0$

$-5 \quad -5 \qquad +6 \quad +6$

$r=\boxed{-5} \qquad r=\boxed{6}$

-30

1 30
2 15
3 10
+5 −6

2) $x^2 - 4x + 3 = 0$

3

$-1 \quad -3$

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

$x-1=0$ OR $x-3=0$

$+1 \quad +1 \qquad +3 \quad +3$

$x=\boxed{1} \qquad x=\boxed{3}$

3) $7x^2 - 24x + 9 = 0$

$7x^2-3x-21x+9=0$

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

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

$x-3=0, \quad x=\boxed{3}$

$7(9)=63$

1 63
−3 −21
7 9

$7x-3=0$

$+3 \quad +3$

$\frac{7x}{7}=\frac{3}{7} \quad x=\boxed{\frac{3}{7}}$

4) $2b^2 + 7b + 3 = 0$

$2b^2+b+6b+3=0$

$b(2b+1)+3(2b+1)=0$

$(b+3)(2b+1)=0$

$2(3)=6$

+1 +6
2 3

$b+3=0$ OR

$-3 \quad -3$

$b=\boxed{-3}$

$2b+1=0$

$-1 \quad -1$

$\frac{2b}{2}=\frac{-1}{2}$

$b=\boxed{\frac{-1}{2}}$

5) Write the function the has x-intercepts at (3,0) and (-5,0).

$x=3 \qquad x=-5$

$-3 \quad -3 \qquad +5 \quad +5$

$x-3=0 \qquad x+5=0$

$y=(x-3)(x+5)$

6) Write the function that has x-intercepts at (-9,0) and (-1,0).

$x=-9 \qquad x=-1$

$+9 \quad +9 \qquad +1 \quad +1$

$x+9=0 \qquad x+1=0$

$y=(x+9)(x+1)$

Write the slope-intercept form of the equation of the line through the given point with the given slope.

7) through: $(1, 5)$, slope = 1

$x_1 \; y_1 \qquad m$

$y-y_1=m(x-x_1)$

$y-5=1(x-1)$

$y-5=x-1$

$+5 \qquad +5$

$\boxed{y=x+4}$

8) through: $(2, -2)$, slope = undefined

$x_1 \; y_1 \qquad m$

Vertical line

$\boxed{x=2}$

Solve each system by elimination.

9) $-x + 6y = 11$
$x - 8y = -15$

$\frac{-2y}{-2}=\frac{-4}{-2}$

$y=2$

$(1,2)$

$x-8(2)=-15$

$x-16=-15$

$+16 \quad +16$

$x=1$

10) $-7x - 6y = -6$
$7x + 10y = -18$

$\frac{4y}{4}=\frac{-24}{4}$

$y=-6$

$(6,-6)$

$7x+10(-6)=-18$

$7x-60=-18$

$+60 \quad +60$

$\frac{7x}{7}=\frac{42}{7}$

$x=6$

Answers to Homework 35.1

1) $\{6, -5\}$

2) $\{1, 3\}$

3) $\left\{\frac{3}{7}, 3\right\}$

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

5) $y = (x-3)(x+5)$

6) $y = (x+9)(x+1)$

7) $y = x + 4$

8) $x = 2$

9) $(1, 2)$

10) $(6, -6)$