

Lesson 1.1.2

1-12

x	0	1	2	3
y	10	12	14	16

1-13

a) $x + 13 = 0$ so $x = -13$ or $x = 7$

$$x - 7 = 0$$

b) $2x + 3 = 0$ so $x = -\frac{3}{2}$ or $x = \frac{7}{3}$

$$3x - 7 = 0$$

c) $x = 0$ so $x = 0$ or $x = 3$

$$x - 3 = 0$$

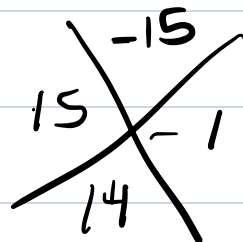
e) $x^2 - 2x - 35 = 0$

$$(x - 7)(x + 5)$$

$$x - 7 = 0 \quad \text{so} \quad x = 7 \quad \text{or} \quad x = -5$$

$$x + 5 = 0$$

f) $3x^2 + 14x - 5 = 0$



$$3x^2 + 15x - 1x - 5 = 0$$

$$(3x^2 + 15x) + (-1x - 5) = 0$$

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

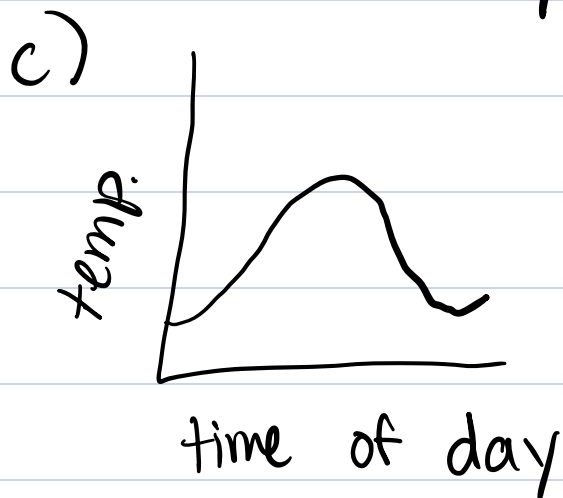
$$(3x - 1)(x + 5) = 0$$

$$\text{so } x = \frac{1}{3} \quad \text{or} \quad x = 5$$

1-18

a) The variable y depends on the variable x . x is the independent variable.

b) Temperature is dependent, the time of day is independent



1-21

$$a) f(3) = -\frac{2}{3}(3) + 3$$

$$= -\frac{6}{3} + 3$$

$$\downarrow = -2 + 3$$

$$f(3) = 1$$

$$b) -5 = -\frac{2}{3}x + 3$$

$$\begin{matrix} -3 & & -3 \end{matrix}$$

$$-8 = -\frac{2}{3}x \quad \cdot \frac{-3}{2}$$

$$\frac{24}{2} = x$$

$$12 = x$$

$$c) g(-3) = 2(-3)^2 - 5$$

$$\downarrow = 2(9) - 5$$

$$= 18 - 5$$

$$g(-3) = 13$$

$$d) -7 = 2x^2 - 5$$

$$+5 \quad +5$$

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

$$\sqrt{-1} = \sqrt{x^2}$$

↪ no real solution

$$e) 8 = 2x^2 - 5$$

$$+5 \quad +5$$

$$\frac{13}{2} = \frac{2x^2}{2}$$

$$\sqrt{\frac{13}{2}} = \sqrt{x^2}$$

$$\pm \sqrt{\frac{13}{2}} = x$$

$$f) 9 = 2x^2 - 5$$

$$+5 \quad +5$$

$$\frac{14}{2} = \frac{2x^2}{2}$$

$$\sqrt{7} = \sqrt{x^2}$$

$$\pm \sqrt{7} = x$$

1-25

$$3(x-2) - 2(x+7) = 2x + 17$$

$$3x - 6 - 2x + 14 = 2x + 17$$

$$x + 8 = 2x + 17$$

$$-9 = x$$