

1.3
#12

Solve: $1,694,200 = 1,308,500(1+g)$
 $1,694,200 = 1,308,500 + 1,308,500g$
 $385,700 = 1,308,500g$
 $0.2948 = g$

So the solution is approximately 0.2948 ✓

1.3
#28

Solve: $\frac{x}{6} = x - 100$

$$x = 6x - 600$$

$$-5x = -600$$

$$x = 120$$

So the solution is 120 ✓

1.3
#34

Let $E =$ total expense (\$)

$N =$ number of purifiers assembled ✓

a) $E = 3,400 + 95N$ ✓

b) Find N so that $E = 5000$

$$5000 = 3400 + 95N$$

$$1600 = 95N$$

$$16.8 \approx N$$
 ✓

Aqua-Clean would have to assemble 17 purifiers to run up \$5000 in expenditures. ✓

2.1
#14

Find an equation for the line with slope 2 that contains the point $(-3, 4)$.

We know our equation looks like

$$y = 2x + b$$

It's easy to find b since $y = 4$ when $x = -3$.

$$4 = 2(-3) + b$$

So, b has to be 10 and our equation is

$$\boxed{y = 2x + 10}$$

2.1
#20

Find an equation for the line containing $(3, 8)$ and $(-5, 0)$.

$$-8 < \begin{array}{c|c} x & y \\ \hline 3 & 8 \\ -5 & 0 \end{array} > -8 \quad \text{So, our slope is } \frac{-8}{-8} = 1.$$

We can now find our equation by the method of exercise #14 above.

$$y = 1x + b$$

But here is easy to see that $b = 5$. So we have

$$\boxed{y = 1x + 5}$$

2.1
#34

let E = the total food service expenditure/month (\$)
 N = the number of students served/month
We are given the following data -

	N	E	
	250	60,000	}
500 <	750	120,000	

So, our slope is $\frac{60,000}{500} = 120$ ✓

Our equation will look like

$$E = 120N + b$$

But $E = 60,000$ when $N = 250$, so

$$60,000 = 120(250) + b$$

$$\Rightarrow 30,000 = b \quad \checkmark$$

(a) So, $E = 120N + 30,000$ ✓

(b) Suppose we know that in the summer E has a value of \$100,000/month. We find N as follows -

$$100,000 = 120N + 30,000 \quad \checkmark$$

$$\Rightarrow N \approx 583\frac{1}{3} \quad \checkmark$$

So, we can conclude that in the summer approximately 583 students were taking meals.