For #'s 26 – 27, set up an equation in order to solve the problem. Define all unknowns.

26. At the local chocolatier, Mark is going to purchase a candy jar and fill it with caramels and taffies. He wants to mix one part caramels and two parts taffies. Caramels sell for \$1.50 per lb and taffies sell for \$1.25 per lb. If he spent \$10 on the candy, how many lbs of each type did he purchase?

 x: the number of pounds of caramels purchased 2x: the number of pounds of taffies purchased 	Check
	2.5 lbs of caramels = $$3.75$ (2.5 lbs \times $$1.50$)
1.50x + 1.25(2x) = 10	
1.5x + 2.5x = 10	5 lbs of taffies = $$6.25$ (5 lbs \times \$1.25)
4x = 10	
<u>4x</u> = <u>10</u>	Total: \$10 (\$3.75 + \$6.25 = \$10)
4 4	
x = 2.5 $2x = 2(2.5) = 5$	
Mark purchased $2\frac{1}{2}$ lbs of caramels and 5 lbs of taffies.	

Table Set Up			
Item	Quantity	Value (price per lb)	Total Value (amount of \$ spent)
lbs of caramel	x	\$1.50	1.50x
lbs of taffies	2x	\$1.25	1.25(2x)

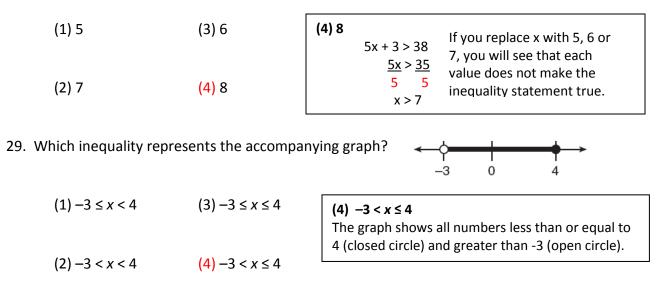
27. Using only 32-cent and 20-cent stamps, Cheri put \$3.36 postage on a package. She used double the amount of 32-cent stamps than 20-cent stamps. Determine how many stamps she used of each kind.

 x: the number of 20-cent stamps used for postage (4) 2x: the number of 32-cent stamps used for postage (8) 	Check
	4 20 cent stamps = \$0.80
0.20x + 0.32(2x) = 3.36	8 32 cent stamps = \$2.56
$20x + 32(2x) = 336 \leftarrow$ multiplied both sides by 100	
20x + 64x = 336	Total: \$3.36 (\$0.80 + \$2.56 = \$3.36)
<u>84x</u> = <u>336</u>	
84 84	
x = 4	
4 20-cent stamps and 8 32-cent stamps	

Table Set Up			
ltem	Quantity	Value (worth of stamp)	Total Value (amount of \$ spent)
20-cent stamps	х	\$0.20	.20x
32-cent stamps	2x	\$0.32	.32(2x)

4) Inequalities

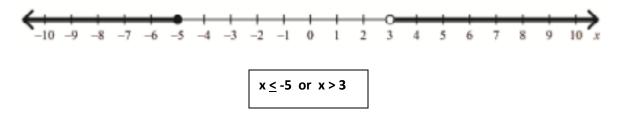
28. Which number is part of the solution set to the inequality 5x + 3 > 38?



30. An electronics store sells DVD players and cordless telephones. The store makes a \$75 profit on the sale of each DVD player (*d*) and a \$30 profit on the sale of each cordless telephone (*c*). The store wants to make a profit of at least \$255.00 from its sales of DVD players and cordless phones. Which inequality describes this situation?

(1) $75d + 30c < 255$	(4) $75d + 30c \ge 255$
(2) $75d + 30c \le 255$	"at least" translates into greater than or equal to
(3) $75d + 30c > 255$	
(4) $75d + 30c \ge 255$	

31. a) Write a compound inequality statement that represents the graph pictured below.



b) Represent the solution set in interval notation.

(- ∞ , -5] \vee (3, ∞)

- 32. David has two jobs. He earns \$8 per hour babysitting his neighbor's children and he earns \$11 per hour working at the coffee shop.
 - a) Write an inequality to represent the number of hours, **b**, babysitting and the number of hours, **c**, working at the coffee shop that David will need to work in order to earn a minimum of \$200.

8*b* + 11*c* <u>></u> 200

b) David worked 15 hours at the coffee shop. Use the inequality to find the number of full hours he must babysit to reach his goal of \$200.

```
8b + 11c \ge 200

8b + 11(15) \ge 200

8b + 165 \ge 200

8b \ge 35

\frac{8b}{8} \ge \frac{35}{8}

b \ge 4.375

David will need to babysit for 5 hours.
```

Check 8(5) + 11(15) ≥ 200 \$40 + \$165 ≥ \$200 \$205 ≥ \$200 David reaches his goal!

33. Solve the inequality below to determine and state the smallest *integer* value of **x** that will make the statement true.

```
27x - 20 \le 5(7x - 2)
```

```
27x - 20 \le 35x - 10
-35x -35x
 -8x - 20 < -10
    +20 +20
     -8x < 10
      -8 -8
       x \ge -1.25 (reverse the inequality symbol when dividing both sides by a negative number)
The smallest integer value that will make the inequality true is -1.
 Check
 27(-1) - 20 \le 5(7(-1) - 2)
   -27 - 20 \le 5(-7 - 2)
         -47 \leq -45 true statement
 Try one value smaller (-2)
 27(-2) - 20 \le 5(7(-2) - 2)
   -54 - 20 \le 5(-14 - 2)
         -74 \leq -80 false statement
```