1) Xavier has a lunch food budget of $120 per month. He spends an average of $6 per day on lunch. Write a function that represents how much money is left in his lunch budget after x days of buying lunch.

Question:

How much money is left in Xavier's account after 7 days?

---

2) Pierson's Pet Palace has an 85 gallon fish tank. When it needs to be cleaned, it can be drained at a rate of 4 gallons per minute. Assuming the tank was full, write a function that represents the amount of water in the tank after x minutes.

Question:

How long has the tank been draining for if it has 33 gallons left?

---

3) You are saving money to buy a stereo system. You have saved $50 so far. You plan to save $20 each week for the next few months. Write a function that represents how much money you have after x weeks.

Question:

How much money do you have savedafter 1 year?

---

4) Your family spends $80 for tickets to a baseball game and $3 per hour for parking. Write a function that gives the total cost of your family's outing to the baseball game after x hours you were there.

Question:

How much does the baseball outing cost if you were there for 7 hours?

---

5) Diamond recently bought a car for $34,000. Her research shows the car will depreciate an average of $1,200 per year. If x represents the number of years Diamond owns the car, write a function that represents the value of car after x years.

Question:

How long has Diamond owned the car if the car value is $28,000?

---

6) The initial fee to have a website set up is $60. It costs $44 per month to maintain the website. Write a function that represents the total cost of setting up and maintaining a website for x months.

Question:

How long can you maintain the website for if you have $940?

7) Your gym membership costs $33 per month after an initial membership fee. You paid a total of $228 after 6 months. Write a function that represents the total cost of your gym membership after x months.

Question:

How much will it cost to have a gym membership for 6 months?

---

8) An editor gets $2890 raise each year. In her eighth year, she is making $27,400 per year. Write a function that represents her income after x years she has worked at the company.

Question:

What is the editor's income after 20 years?

---

9) A tomato plant grows approximately 1.3 centimeters per day. On the ninth day, the plant is approximately 21.7 centimeters tall. Write a function that represents the height of the tomato plant after x days.

Question:

How tall is the tomato plant after 10 days?

---

10) Four years after a maple tree was planted, its height was 9 feet. Eight years after it was planted, the maple tree's height was 12 feet. Write a function that represents the height of the tree after x years.

Question:

a) What is the growth rate of the maple tree?

b) What was the height when it was planted?

---

11) In Bicycle Moto Crossing (BMX) racing, racers purchase a one year membership to a track. They also pay an entry fee for each race at that track. One racer paid a total of $125 after 5 races. A second racer paid a total of $170 after 8 races. Write a function that represents the total cost of a race after x races.

Question:

a) How much does the track membership cost?

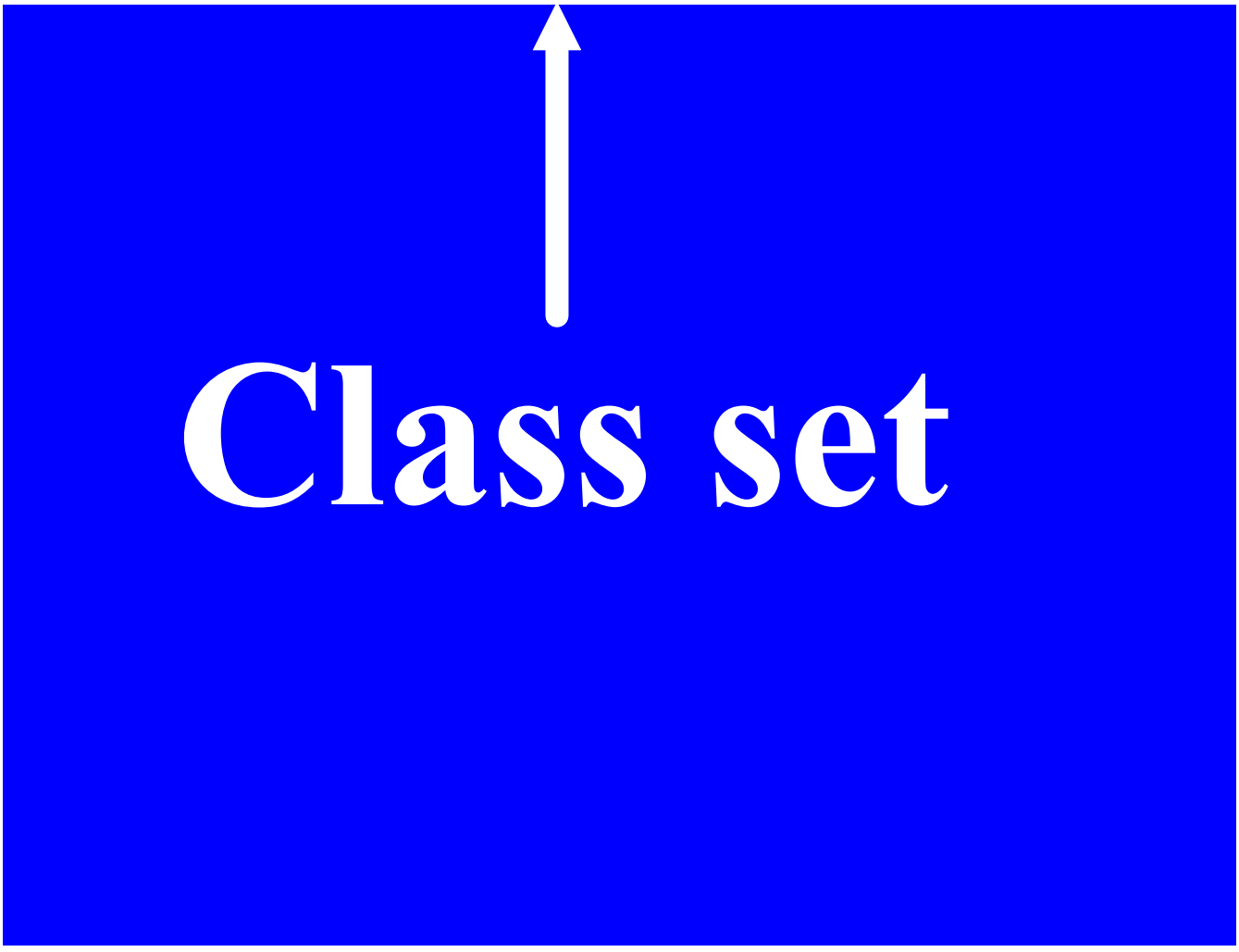
b) What is the entry fee per race?

---

12) You use a garden hose to fill a swimming pool at a constant rate. The pool is empty when you begin to fill it. The pool contains 15 gallons of water after 5 minutes. After 30 minutes, the pool contains 90 gallons of water. Write a function that represents the volume (in gallons) of water in the pool after x minutes since you began filling it.

Question:

What is the volume of the pool after 1 hour?


Class set

CW

Linear Function Problem Solving

y = mx + b

$f(x) = 50 + 20x$

$f(x) = 2890x + 4280$

$f(x) = 85 - 4x$

$f(x) = 15x + 50$

$f(x) = 1.3x + 10$

$f(x) = 34{,}000 - 1{,}200x$

$f(x) = 120 - 6x$

$f(x) = 80 + 3x$

$f(x) = 33x + 30$

$f(x) = 3x$

$f(x) = 60 + 44x$

$f(x) = 0.75x + 6$

1. $m =$

$b =$

2. $m =$

$b =$

3. $m =$

$b =$

4. $m =$

$b =$

0.75

5

6

13

15

20

23

50

78

101

180

228

1,090

62,080

p. 2

CW

5. $m =$

$b =$

6. $m =$

$b =$

7. $m =$

$b = ?$

$(x, y) =$

8. $m =$

$b = ?$

$(x, y) =$

9. $m =$

$b = ?$

$(x, y) =$

10. $m =$

$b =$

$(x, y) =$

$(x, y) =$

11. $m =$

$b =$

$(x, y) =$

$(x, y) =$

12. $m =$

$b =$

$(x, y) =$

$(x, y) =$

Practice-*Writing Linear Equations Review*-

slope-intercept form **point-slope form** **standard form**

1. A line has a *y*-intercept of -11 and a slope of 3. Find the equation of the line.

○ **A.** $y = 3x + 11$ ○ **C.** $y = -11x - 3$

○ **B.** $y = 3x - 33$ ○ **D.** $y = 3x - 11$

$m =$
$b =$

2. A line passes through the point $(4,-3)$ and has a slope of $\frac{3}{2}$. Find the equation of the line. *show work!*

○ **A.** $y = \frac{3}{2}x - 3$ ○ **C.** $y = -\frac{3}{2}x - 3$

○ **B.** $y = -\frac{3}{2}x - 9$ ○ **D.** $y = \frac{3}{2}x - 9$

3. What is the equation for a line that passes through the points $(7, -3)$ and $(-14, 24)$?

○ **A.** $y = \frac{9}{7}x - 6$ ○ **C.** $y = \frac{9}{7}x + 6$

○ **B.** $y = -\frac{9}{7}x - 6$ ○ **D.** $y = -\frac{9}{7}x + 6$

$m =$
$b =$
$(x, y) =$

4. Convert the following linear equation to slope–intercept form. *show work!*

$$y - 3 = -\frac{10}{9}(x - 1)$$

○ **A.** $y = -\frac{10}{9}x + 2$ ○ **C.** $y = -\frac{10}{9}x + \frac{10}{9}$

○ **B.** $y = -\frac{10}{9}x + 4$ ○ **D.** $y = -\frac{10}{9}x + \frac{37}{9}$

5. Convert the following linear equation to standard form. *show work!*

$$y = -\frac{3}{4}x - 9$$

○ **A.** $-\frac{3}{4}x - y = 9$ ○ **C.** $3x + 4y = -9$

○ **B.** $3x + 4y = -36$ ○ **D.** $\frac{3}{4}x + y = -9$

p. 4

6. Given (7,27) is a point on the following line, convert the equation to point-slope form.

$y = 3x + 6$

$m =$

$(x, y) =$

- **A.** $y + 7 = 3(x + 27)$
- **B.** $y + 27 = 3(x + 7)$
- **C.** $y - 7 = 3(x - 27)$
- **D.** $y - 27 = 3(x - 7)$

---

7. Convert the following linear equation to standard form. *show work!*

$$y - 7 = 3(x - 4)$$

- **A.** $3x - y = -5$
- **B.** $3x + y = 5$
- **C.** $3x - y = 5$
- **D.** $3x - y = -3$

---

8. Given $(-4, y_0)$ is a point on the following line, convert the equation to point-slope form.

$y = 4x + 3$

$m =$

$(x, y) =$

- **A.** $y + 13 = 4(x + 4)$
- **B.** $y - 3 = 4(x + 4)$
- **C.** $y - 13 = 4(x - 4)$
- **D.** $y - 3 = 4(x - 4)$

---

9. Given (3,-6) is a point on the following line, convert the equation to point-slope form. *show work!*

$12x + 3y = 18$

$m =$

$(x, y) =$

- **A.** $y - 6 = -12(x - 3)$
- **B.** $y + 6 = -12(x - 3)$
- **C.** $y + 6 = -4(x - 3)$
- **D.** $y - 6 = -4(x - 3)$

---

10. Convert the following linear equation to slope-intercept form. *show work!*

$-5x - 3y = -6$

- **A.** $y = {}^{5}/_{3}x - 2$
- **B.** $y = -{}^{5}/_{3}x + 2$
- **C.** $y = -{}^{5}/_{3}x - 2$
- **D.** $y = {}^{5}/_{3}x + 2$

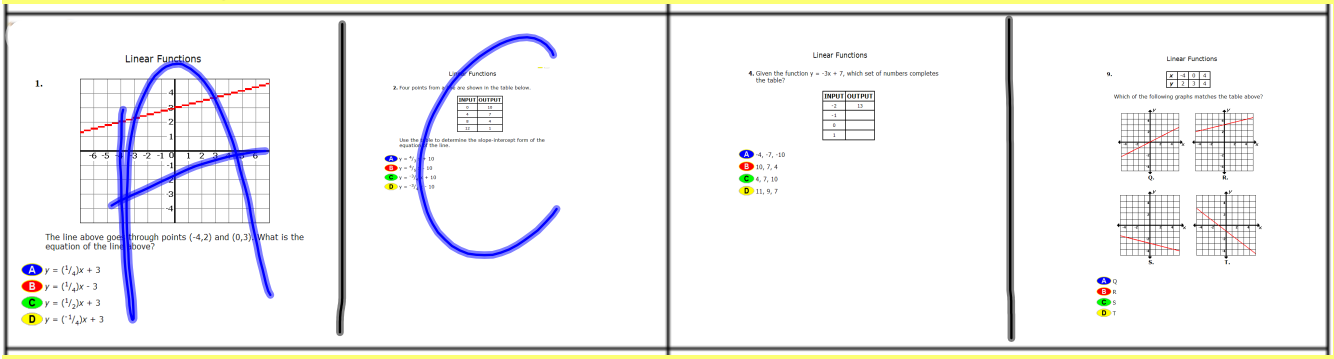
IF Monday

Slope-Intercept Form $y=mx+b$

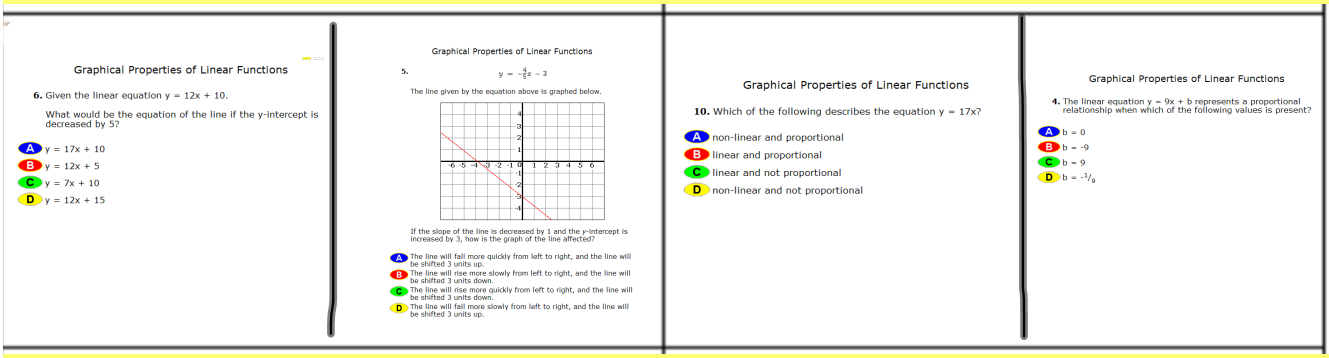
Point-Slope Form $y-y_1=m(x-x_1)$

Standard Form $Ax+By=C$

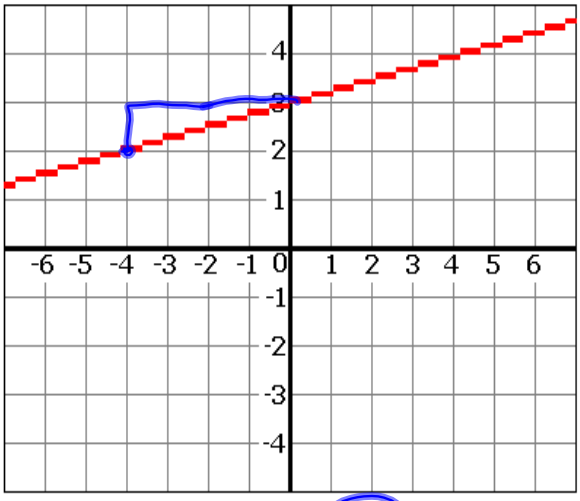
Tuesday



Wednesday



1.



The line above goes through points (-4,2) and (0,3). What is the equation of the line above?

A $y = (1/4)x + 3$

B $y = (1/4)x - 3$

C $y = (1/2)x + 3$

D $y = (-1/4)x + 3$

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

$\frac{y_1 - y_2}{x_1 - x_2}$

$y = mx + b$

2. Four points from a line are shown in the table below.

INPUT	OUTPUT
0	10
4	7
8	4
12	1

Use the table to determine the slope-intercept form of the equation of the line.

A $y = {}^{4}/_{3}\,x + 10$

B $y = {}^{4}/_{5}\,x - 10$

C $y = {}^{-3}/_{4}\,x + 10$

D $y = {}^{3}/_{4}\,x - 10$

4. Given the function y = -3x + 7, which set of numbers completes the table?

INPUT	OUTPUT
-2	13
-1	
0	
1	

A -4, -7, -10

B 10, 7, 4

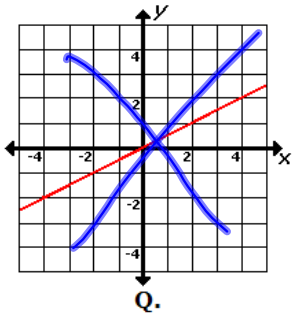
C 4, 7, 10

D 11, 9, 7

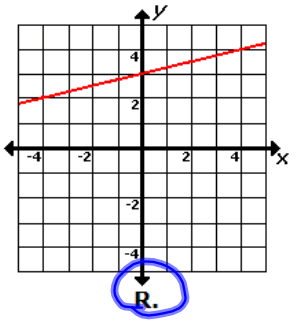
9.

x	-4	0	4
y	2	3	4

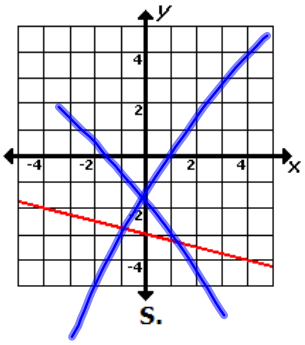
Which of the following graphs matches the table above?



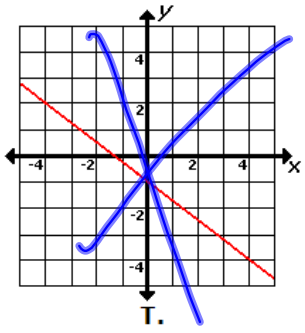
Q.



R.



S.



T.

A Q

B R

C S

D T

6. Given the linear equation y = 12x + 10.

What would be the equation of the line if the y-intercept is decreased by 5?

A ~~y = 17x + 10~~

B y = 12x + 5

C ~~y = 7x + 10~~

D y = 12x + 15

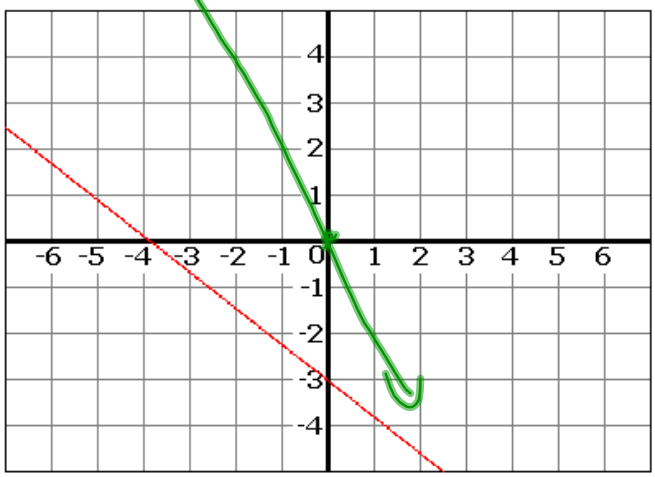
5.

$y = -\frac{4}{5}x - 3$

The line given by the equation above is graphed below.

y=-.8x-3

y=-1.8x+0



If the slope of the line is decreased by 1 and the *y*-intercept is increased by 3, how is the graph of the line affected?

A The line will fall more quickly from left to right, and the line will be shifted 3 units up.

B The line will rise more slowly from left to right, and the line will be shifted 3 units down.

C The line will rise more quickly from left to right, and the line will be shifted 3 units down.

D The line will fall more slowly from left to right, and the line will be shifted 3 units up.

10. Which of the following describes the equation y = 17x?

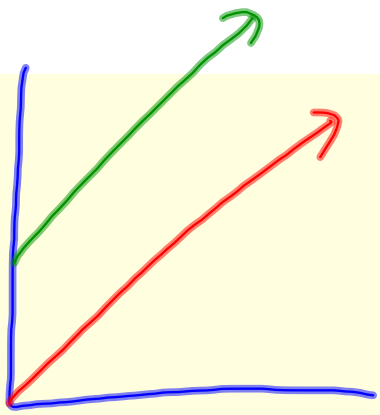
A ~~non-linear and proportional~~

B linear and proportional

C linear and not proportional

D ~~non-linear and not proportional~~

$y = mx + b$



4. The linear equation y = 9x + b represents a proportional relationship when which of the following values is present?

A b = 0

B b = -9

C b = 9

D b = $-\frac{1}{9}$

Linear Review & Parallel -Perpendicualar Lines ***Name:_____ Hour:___***

pg. #	Learning Targets	CW (teacher sign)	Practice assignment	Practice assignment (teacher sign)	Understanding?
1-4	Linear function problem solving.		3-4		
	Study Island--Linear review.				
	Graphing Review				
	I can write equations in slope-intercept form of parallel lines.				
	I can write equations in slope-intercept form of perpendicular lines.				
	Parallel perpendicular review				
	What shape? (graphing calculator)				

11) $m = -6$

$b = 120$

$y = mx + b$

$y = -6x + 120$

$f(x) = 120 - 6x$

$y = 120 - 6(7)$

$y = \$78$

7) $m = 33$

$b = ?$

$(x, y) = (6, 228)$

$y - 228 = 33(x - 6)$

$y - 228 = 33x - 198$

$+228 \qquad +228$

$y = 33x + 30$

$y = 33 \cdot 6 + 30$

$y = \$228$

Today's Agenda

1-6: $y = mx + b$

7-12: $y - y_1 = m(x - x_1)$

1) Complete word problems (1-12)

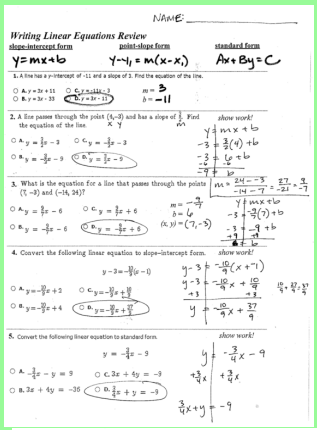
2) Raise hand for CW stamp (Spaeth)

3) Start Practice

Practice

Writing Linear Equations Review

1. D
2. D
3. D
4. D
5. D
6. D
7. C
8. A
9. C
10. B


NAME:

Writing Linear Equations Review

slope-intercept form: $y=mx+b$ point-slope form: $y-y_1=m(x-x_1)$ standard form: $Ax+By=C$

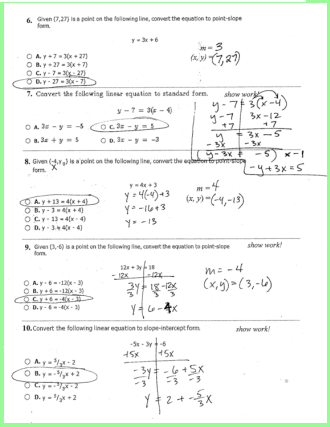
1. A line has a y-intercept of -11 and a slope of 3. Find the equation of the line.
A. $y=3x+11$ C. $y=\frac{1}{11}x-3$ $m=3$
B. $y=3x-33$ D. $y=3x-11$ $b=-11$

2. A line passes through the point $(4,-9)$ and has a slope of $\frac{3}{4}$. Find the equation of the line. show work!
A. $y=\frac{3}{4}x-3$ C. $y=-\frac{3}{4}x-3$
B. $y=-\frac{3}{4}x-9$ D. $y=\frac{3}{4}x-9$

3. What is the equation for a line that passes through the points $(7,-5)$ and $(-14,24)$?
A. $y=\frac{9}{7}x-6$ C. $y=\frac{9}{7}x+6$
B. $y=-\frac{9}{7}x-6$ D. $y=-\frac{9}{7}x+6$

4. Convert the following linear equation to slope-intercept form. show work!
A. $y=\frac{10}{9}x+2$ C. $y=-\frac{10}{9}x+\frac{10}{9}$
B. $y=-\frac{10}{9}x+4$ D. $y=-\frac{10}{9}x+\frac{37}{9}$

5. Convert the following linear equation to standard form. show work!
A. $\frac{3}{4}x-y=9$ C. $2x+4y=-9$
B. $3x+4y=-36$ D. $\frac{3}{4}x+y=-9$


6. Given $(7,27)$ is a point on the following line, convert the equation to point-slope form.
$y=3x+6$
A. $y+7=3(x+27)$
B. $y+27=3(x+7)$
C. $y-7=3(x-27)$
D. $y-27=3(x-7)$

7. Convert the following linear equation to standard form. show work!
$y-7=3(x-4)$
A. $3x-y=-5$ C. $2x-y=5$
B. $3x+y=5$ D. $3x-y=-9$

8. Given $(-4,y_2)$ is a point on the following line, convert the equation to point-slope form.
A. $y+13=4(x+4)$
B. $y-3=4(x+4)$
C. $y-13=4(x-4)$
D. $y-3=4(x-4)$

9. Given $(3,-6)$ is a point on the following line, convert the equation to point-slope form. show work!
A. $y-6=-12(x-3)$
B. $y+6=-12(x-3)$
C. $y+6=-4(x-3)$
D. $y-6=-4(x-3)$

10. Convert the following linear equation to slope-intercept form. show work!
A. $y=\frac{5}{3}x-2$
B. $y=-\frac{5}{3}x+2$
C. $y=-\frac{5}{3}x-2$
D. $y=\frac{5}{3}x+2$