Review: Slope Intercept Form $y = mx + b$

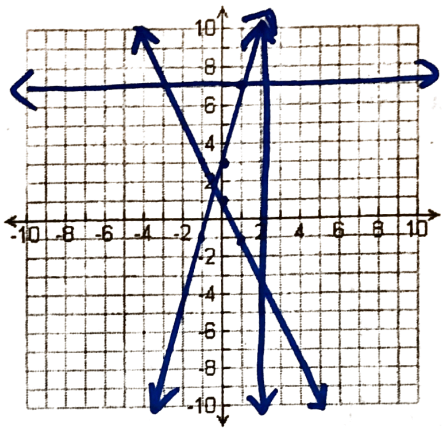
Graph the following on the coordinate plane to the right:

$y = 4x + 3$

$y = -2x + 1$

$y = 7$

$x = 2$



Standard Form Notes

Standard Form: $Ax + By = C$ A, B, C are real numbers; can't have both A + B = 0

- x & y both have an exponent of 1
- x & y are not multiplied together
- x & y are not in a denominator or a radical sign √

The **x-intercept** is the x-coordinate of the point where the graph intersects the x-axis. The y-coordinate of this point is always 0.

The **y-intercept** is the y-coordinate of the point where the graph intersects the y-axis. The x-coordinate of this point is always 0.

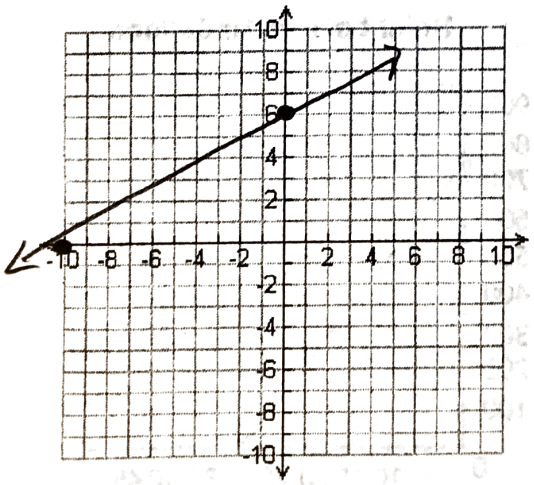
Find the x and y intercepts: 5x – 2y =10 from the equation.

y-intercept: $-2y = 10$, $y = -5$ | x-intercept: $5x = 10$, $x = 2$

Find the x and y intercepts from a linear equation in standard form. Then graph the function

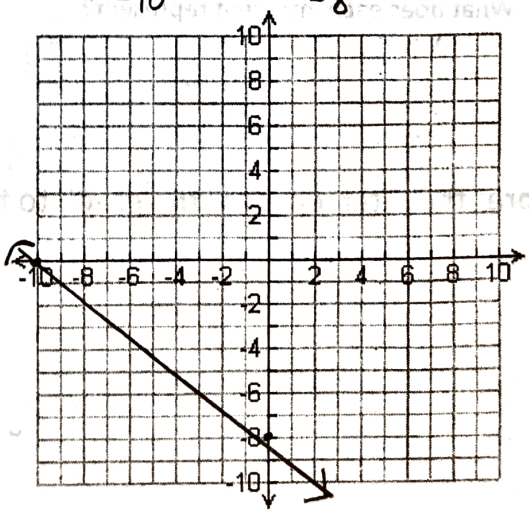
1) $-3x + 5y = 30$

x-int: -10 | y-int: 6

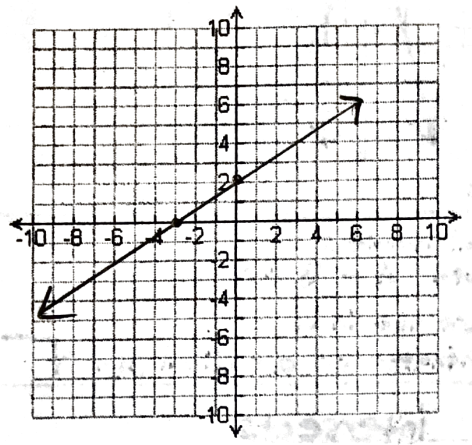


2) $-4x - 5y = 40$

x-int: -10 | y-int: -8



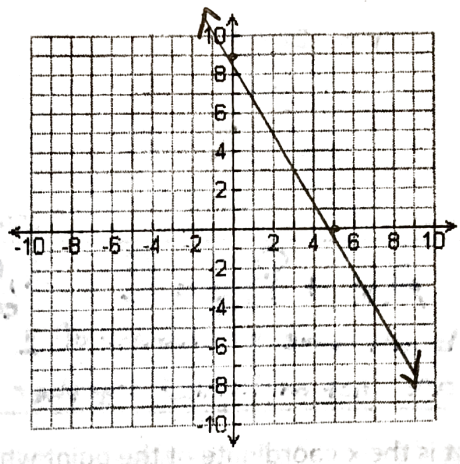
3) $2x - 3y = -6$



4) $\frac{3}{5}x + \frac{1}{3}y = 3$

$\frac{5}{3} \cdot \frac{3}{5}x = 3 \cdot \frac{5}{3}$, $\frac{3}{1} \cdot \frac{1}{3}y = 3 \cdot 3$

$x = 5$ $y = 9$



The school sells pens for $2.00 and notebooks for $3.00. You have $60 to spend on notebooks and pens.

A. Write an equation for this situation.

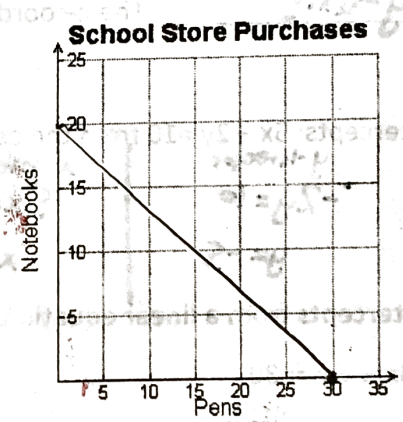
$2x + 3y = 60$

B. Find the intercepts.

x-int: 30

y-int: 20

C. Sketch a graph for the function



D. What does each intercept represent?

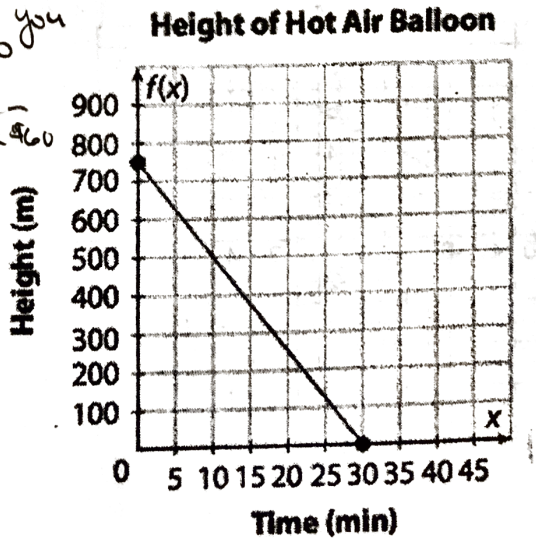
x-int: If you don't buy any notebooks you can buy 30 pens with $60

y-int: If you don't buy any pens you can buy 20 notebooks with $60

Interpret the intercepts for the graph to the right.

y-int: you start at 750 m in the air

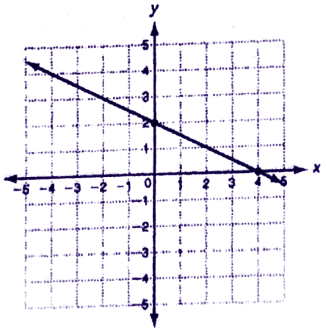
x-int: it takes 30 min to reach the ground



Name _____ Date _____ Class _____

Standard Form HW

Find the *x*- and *y*-intercepts.

1. 

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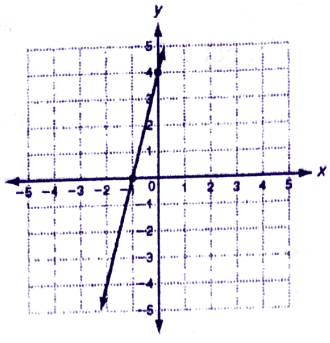
2. 

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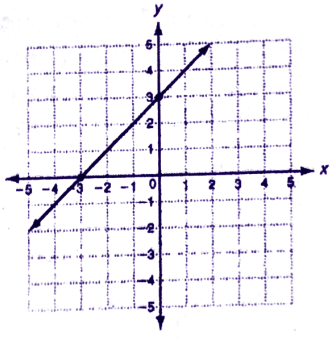
3. 

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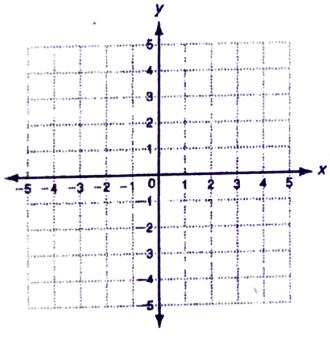
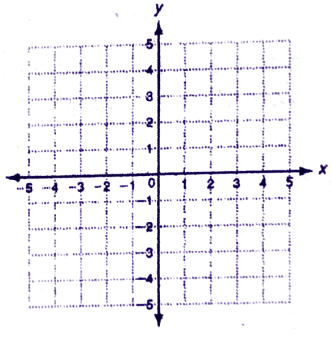
Graph each equation from standard form.

4. $3x + 2y = -6$



5. $x - 4y = 4$



6. At a fair, hamburgers sell for $3.00 each and hot dogs sell for $1.50 each. The equation $3x + 1.5y = 30$ describes the number of hamburgers and hot dogs a family can buy with $30.

   a. Find the intercepts and graph the function.

   _____

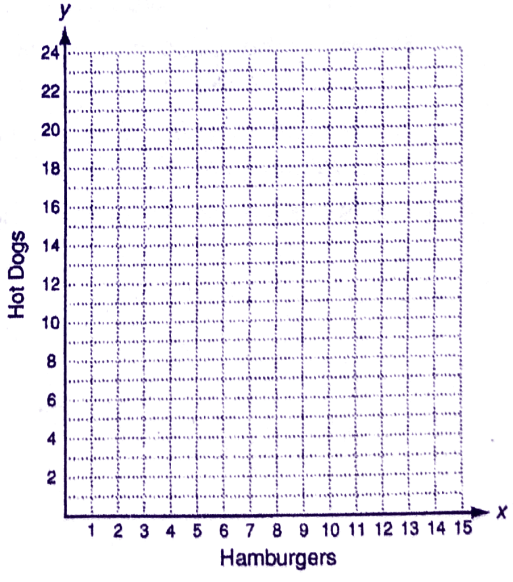
   b. What does each intercept represent?

   _____

   _____

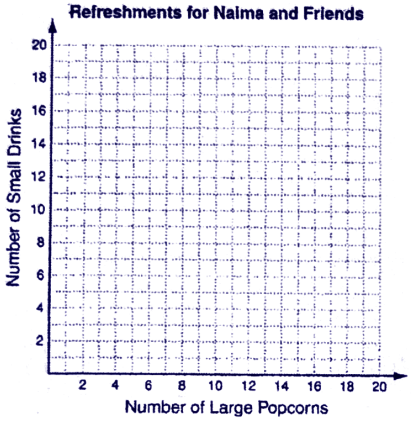
   _____

   _____

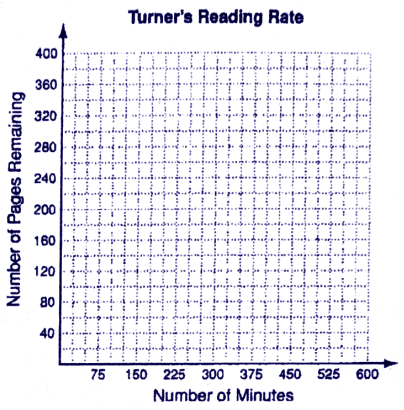


Write the correct answer.

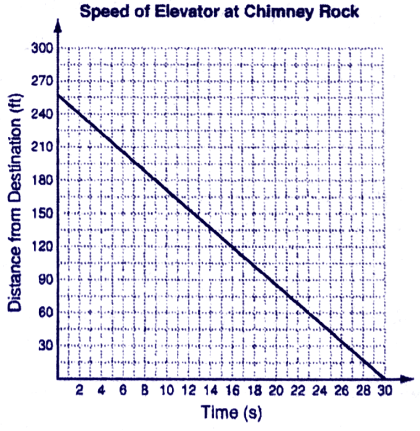
1. Naima has $40 to spend on refreshments for herself and her friends at the movie theater. The equation $5x + 2y = 40$ describes the number of large popcorns x and small drinks y she can buy. Graph this function and find its intercepts.



2. Turner is reading a 400-page book. He reads 4 pages every 5 minutes. The number of pages Turner has left to read after x minutes is represented by the function $f(x) = 400 - \frac{4}{5}x$. Graph this function and find its intercepts.



The graph shows the distance of an elevator at Chimney Rock, North Carolina, from its destination as a function of time. Use the graph to answer questions 3–6. Select the best answer.



3. What is the x-intercept of this function?

   A 0 C 258

   B 30 D 300

4. What does the x-intercept represent?

   F the total distance the elevator travels

   G the number of seconds that have passed for any given distance

   H the number of seconds it takes the elevator to reach its destination

   J the distance that the elevator has traveled at any given time

5. What is the y-intercept for this function?

   A 0 C 258

   B 30 D 300

6. What does the y-intercept represent?

   F the total distance the elevator travels

   G the number of seconds that have passed for any given distance

   H the number of seconds it takes the elevator to reach its destination

   J the distance that the elevator has traveled at any given time