Warm Up
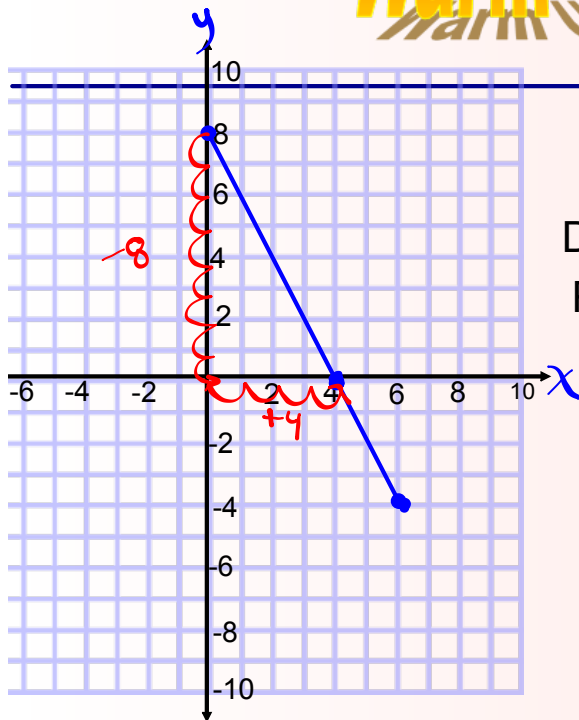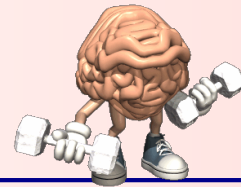
State the :

Domain: $\{x \mid 0 \le x \le 6, x \in R\}$

Range: $\{y \mid -4 \le y \le 8, y \in R\}$

Function/Nonfunction:

x Intercept= 4 (4,0)

y Intercept= 8 (0,8)

Rate of change= $\frac{rise}{run} \frac{\Delta y}{\Delta x}$

$\frac{-8}{+4} = \boxed{-2}$

Equation:

$y = -2x + 8$

2) Given y = 3x + 12 find the x and y intercepts

$x \to$ intercept
  let $y = 0$

$y = 3x + 12$

$0 = 3x + 12$

$0 + 12 = 3x + 12 - 12$

$-12 = 3x$

$\frac{-12}{3} = \frac{3x}{3}$

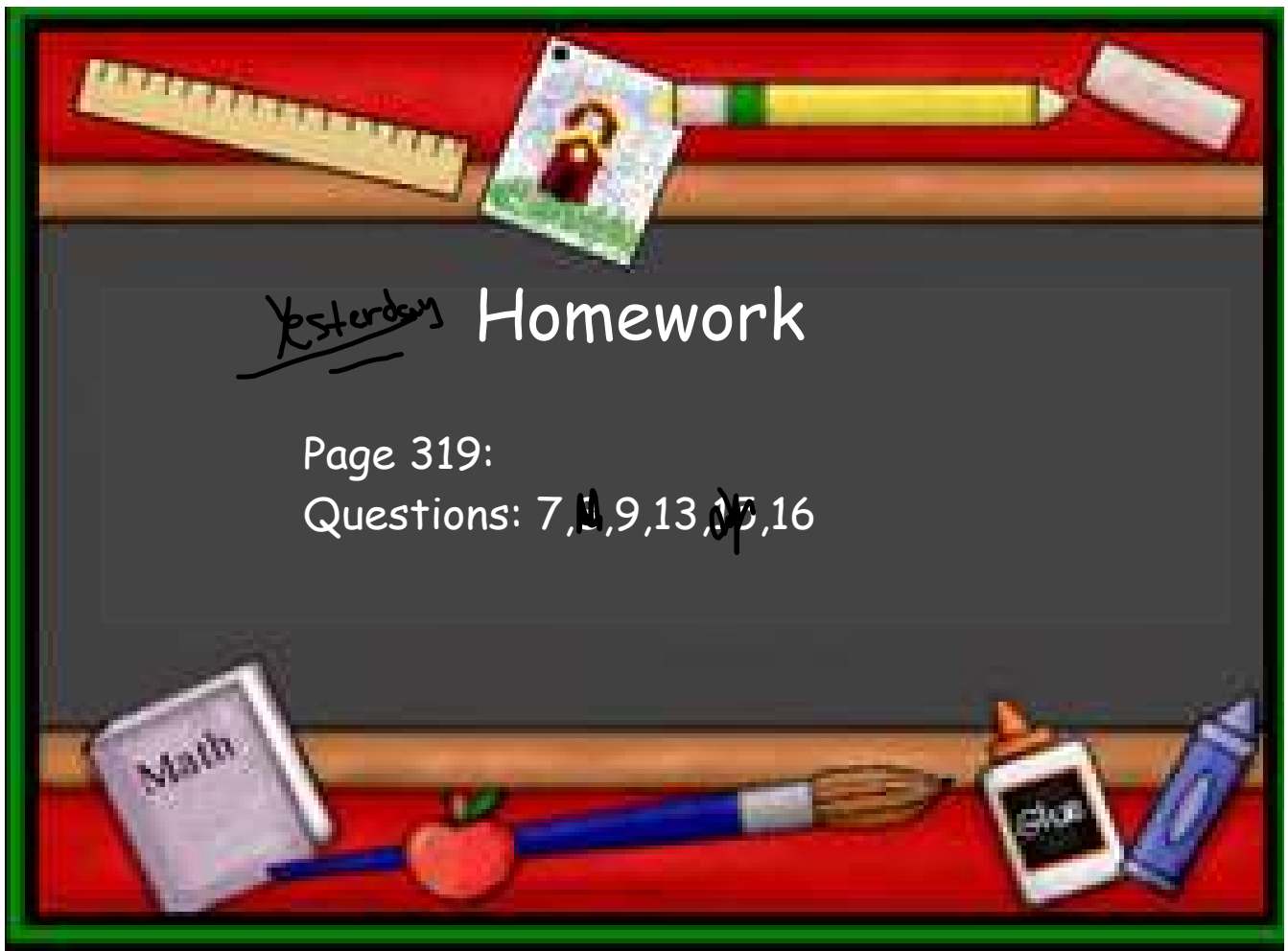$\boxed{-4 = x}$ ← intercept

$(-4, 0)$

y intercept let x=0

$y = 3x + 12$

$3(0) + 12$

$y = 0 + 12$

$\boxed{y = 12}$

$(\overset{x}{0}, \overset{y}{12})$

Yesterday Homework

Page 319:
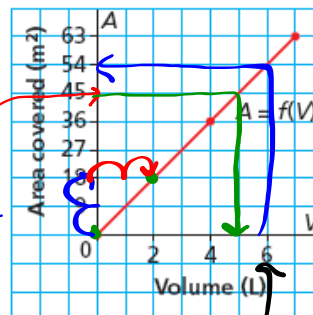Questions: 7,~~8~~,9,13,~~15~~,16

7. This graph shows the area, *A* square metres, that
   paint covers as a function of its volume, *V* litres.
   a) What is the rate of change? What does it
      represent?
   b) What area is covered by 6 L of paint?
   c) What volume of paint would cover 45 m²? 5L

always count
with their
block

rate $\frac{\Delta y}{\Delta x}$ = $\frac{+18 \, m^2 \, s.z^e}{+2 \, L}$ = $9 \, m^2/L$

b) read off graph
      V = 6L
      54m²

Graph labels: Area covered (m²) on vertical axis with values 63, 54, 45, 36, 27, 18. Volume (L) on horizontal axis with values 0, 2, 4, 6. A = f(V)

5.7 Interpreting Graphs of Linear Functions

9. St. Adolphe, Manitoba, is located in the flood
plain of the Red River. To help prevent flooding,
backhoes were used to build dikes around houses
and farms in the town. This graph shows the
labour costs for running a backhoe. $\rightarrow$ 0,0
a) Determine the vertical and horizontal
   intercepts. Write the coordinates of the point
   where the graph intersects the axes. Describe
   what the point represents.   work on tnch
                                 earn 0
b) Determine the rate of change. $\dfrac{400}{5h} = \$80/h$
   What does it represent?
c) Write the domain and range. Get paid $80 an hour to work
d) What is the cost to run the backhoe for 7 h? ≈$550
e) For how many hours is the backhoe run
   when the cost is $360?   ≈4.5hrs
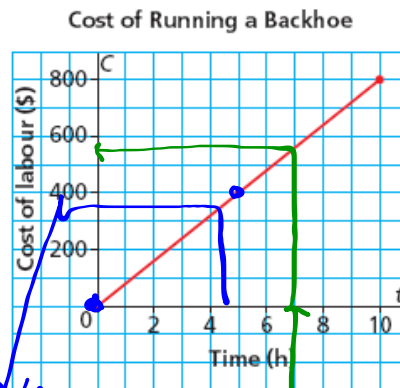
Cost of Running a Backhoe

Cost of labour ($) vs Time (h) — graph with line rising from origin, values 200, 400, 600, 800 on vertical axis; 2, 4, 6, 8, 10 on horizontal axis.

5.7 Interpreting Graphs of Linear Functions

13. The capacity of each of 2 fuel storage tanks is 100 m³. Graph A represents the volume of fuel in one tank as a function of time as the tank is filled. Graph B represents the volume of fuel in another tank as a function of time as the tank is emptied.

Graph A

Graph B

$\frac{-20}{5} = -4 m^3/min$

$\frac{10}{5} = 2m^3/min$
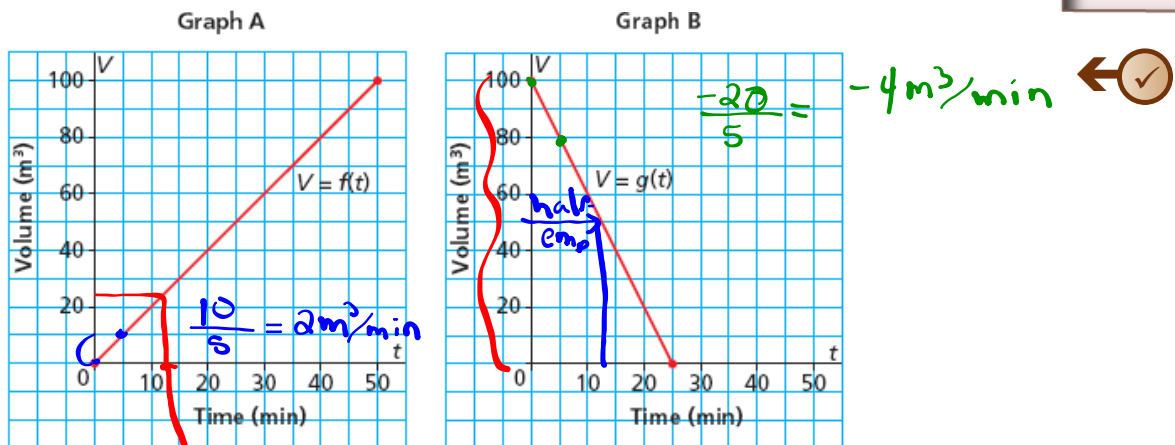
half emp

a) Does it take longer to fill the empty tank or empty the full tank? How do you know?

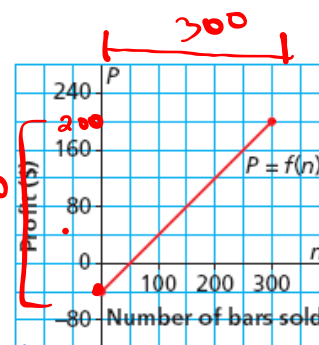b) In the time it takes for one tank to be half empty, about how much fuel would be in a tank that was being filled from empty? 12 min to be half empty

12 min on graph A is about 25 m³

5.7 Interpreting Graphs of Linear Functions

16. Northlands School Outdoor Club had a fundraiser
to help purchase snowshoes. The club had
300 power bars to sell. This graph shows
the profit made from selling power bars.
a) What is the profit on each bar sold? How do
you know?
b) Determine the intercepts. What does each
represent?
c) Describe the domain and range for the
function. Why would you not want to list all
the values in the range?

x int = 50 → breakeven
y = -40 → owe money to start company

$$\frac{240}{300} = 0.80/bar$$

240 $

300

$\leftarrow$ 1240

300

```
240  P
200
160         P = f(n)
 80
  0              n
    100 200 300
 -80  Number of bars sold
```

Profit ($)

5.7 Interpreting Graphs of Linear Functions

Study for
CHAPTER 5 TEST

Tomorrow

$$Rak = \frac{\Delta y}{\Delta x} = \frac{rise\,\updownarrow}{run\,\leftrightarrow}$$

Page 326-329
Questions:
1,3,5,6,8.10,11,13,16,18,

don't graph

13 Multiple choice

* Given sets or ordered pairs determine which are function and non-functions.

* Given Table of Values, which is the independent variable or dependent variable. Which table of values represents a linear equation.

*Read info off graph. What does a certain segment mean?

*Function or Non-function and Domain/Range when given a picture of a graph. Where is the x and y- intercepts?

*Given ordered pairs or word problem, find the rate of change

5 Short Response

1) Given 3 functions (Evaluate or solve)

2) Same as Nov. 21 Warm up on Table of values and rate of change (PROVE)

3) Given a linear graph find the rate of change and x,y - intercepts

4) Given an equation a) Write the function notation, b) Evaluate when given an x value c) Solve when given a C(x) value

5) Given 2 equation solve for x(LET y=0 and solve) and y intercepts (Let x=0 and solve)