

**REVIEW: DETERMINE THE EQUATION in  $y = mx + b$**        $m = \text{slope}$        $b = y \text{ intercept}$

a) **From a Word Problem**

You want to rent a hardwood floor sanding machine. The rental cost is \$50 for 3 hours and \$110 for 9 hours.

a) There are two variables in this problem: **time** and **cost**. Fill the chart below:

Variable	Dependent/Independent	Axis
Time	independent	x
Cost	dependent	y

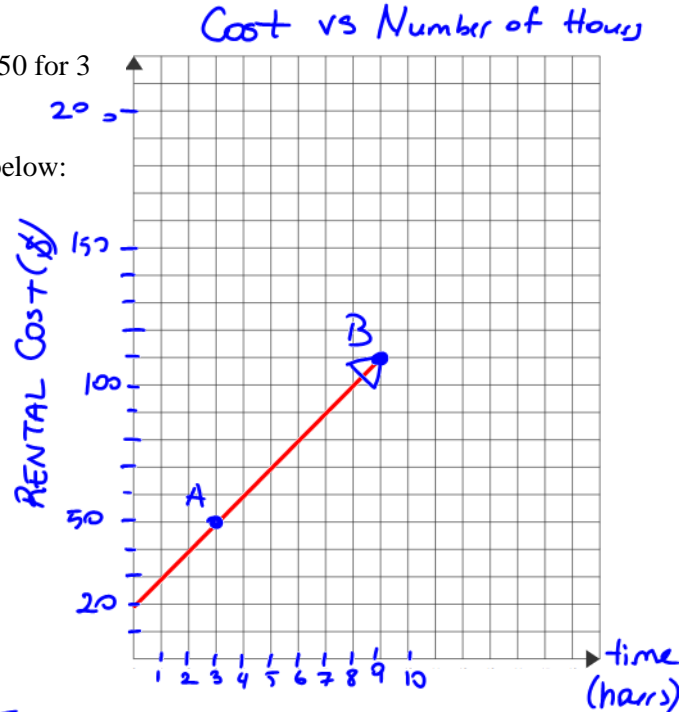
b) Label the graph based on your chart above. Choose an appropriate scale for each variable...

c) Plot the given info on the Cartesian plane and calculate the slope.

$$m = \frac{110 - 50}{9 - 3} = \frac{60}{6} = 10$$

Slope (m) is 10. This is rental cost per 1 hour.

$\$10/1 \text{ hour}$



d) Determine the cost for 0 hour either from the graph or a table of values. This is the y-intercept (b) or initial fee...

From the graph it is 20

hour	cost
0	20
1	30
2	40
3	50

$y - \text{int} = 20$

e) Using c for cost and h for the number of hours, determine the equation that represents this situation.

$$y = mx + b$$

$$c = 10h + 20$$

f) **Extrapolate** the rental cost for 24 hours using the equation above

$$C = 10h + 20$$

$$= 10(24) + 20$$

$$= 240 + 20$$

$\therefore$  The cost is \$260.

b) **From a Situation**

Situation	Variables	Equation
A printing job costs \$150 plus \$25 per set. <i>rate \$25, fixed cost \$150</i>	c, s	$C = 25s + 150$
Photofinishing costs \$3 plus \$4 per set of 12 pictures. <i>rate \$4, fixed \$3</i>	c, s	$C = 4s + 3$
The amount of fuel in a gas tank is 50 litres minus the amount used which is 0.12 litres per kilometre driven. <i>rate 0.12, initial 50</i>	a, d	$a = 50 - 0.12d$
The cost of hiring a disc jockey for a dance is \$40 plus \$20 per hour. <i>fixed 40, rate \$20</i>	c, h	$C = 20h + 40$

MAKING A SOUND FINANCIAL DECISION - BREAK EVEN PROBLEMS

**Movie Night**

There are two payment options for downloading movies from a Web site:

**Option A:** Pay \$10 for a membership and \$2 per movie downloaded.

**Option B:** Pay \$4 per movie download.

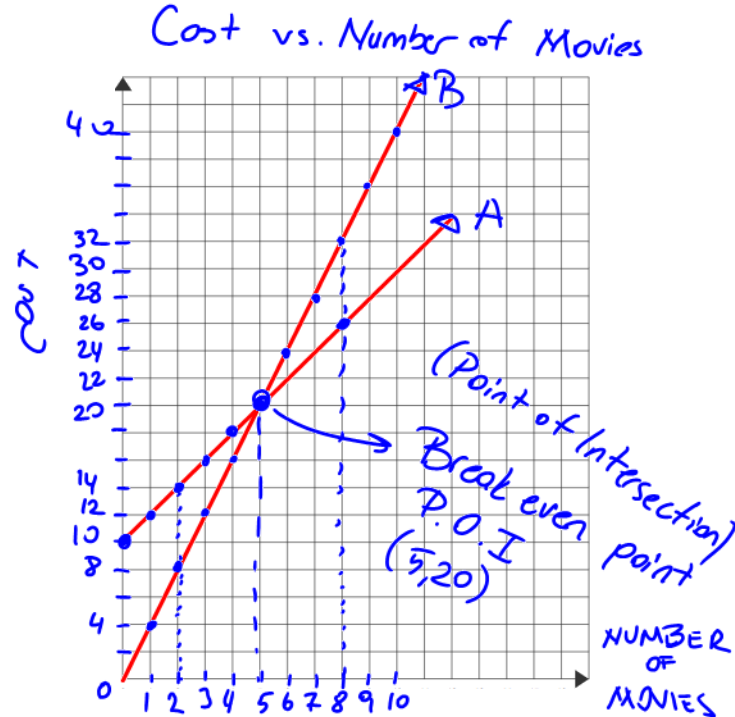
Determine under which conditions a person should select Option A and under which conditions a person should select Option B.

Justify your answer. *Hint: Graph each situation on the plane below.*

Graph each?

Option A = fixed cost (b) = \$10  
 rate (m) = \$2

Option B = fixed cost (b) = none (\$0)  
 rate (m) = \$4



CONCLUSION

less than 5 movie	5 movies	more than 5
if you download 2 movies, you'd pay \$8 with option B and \$14 with option A. Thus B is the better one financially. WINNER OPTION B	for 5 movies, the cost would be \$20 for both options. There is no winner here. Either option is good. WINNER BOTH/NONE	Say you downloaded 8 movies, you'd pay \$26 with option A and \$32 with option B. Thus, A is the better one financially. WINNER OPTION A