

Concept Ck. A

$$1^\circ\text{C rise} \rightarrow \$0.15 \text{ increase} \Rightarrow m = \frac{\Delta y}{\Delta x}$$

$$m = \frac{\$0.15}{1^\circ\text{C}}$$

(32°C, \$1.50)
 x y

a) let x be the temperature ($^\circ\text{C}$)
 y be the cooling cost (\$)

$$m = 0.15 \quad y = mx + b$$

$$(32, 1.50) \quad 1.50 = 0.15(32) + b$$

$$1.50 = 4.80 + b$$

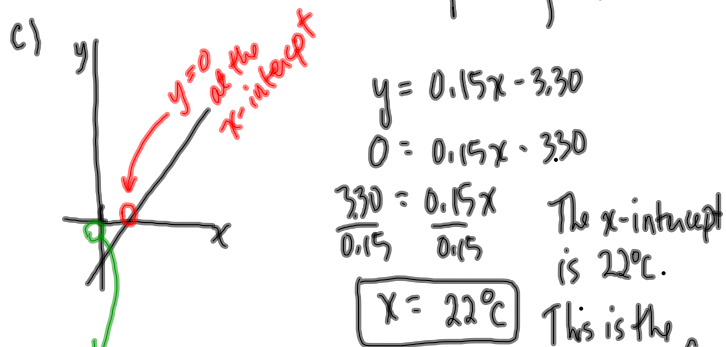
$$\begin{matrix} -4.80 & -4.80 \\ -3.30 = b \end{matrix}$$

$y = 0.15x - 3.30$

b) $y = 0.15x - 3.30$
 $y = 0.15(38) - 3.30$
 $y = 5.70 - 3.30$

$y = \$2.40$

 ← When the temperature is 38°C the daily cooling costs will be \$2.40.



d) The y-intercept represents the cost when the temperature is 0°C .
 This is the temperature for which the cooling cost will be zero.

More Conditional Solutions

You are offered 3 salary packages when you take a Sales job at a new furniture store:

A: \$20 000 plus 1% of your sales

B: \$15 000 plus 2% of your sales

C: \$12 000 plus 3% of your sales

① Equations to represent the various packages: $\frac{1}{100} = 1\%$

let x be the sales (\$)
 y be the earnings (\$)

A: $y = 20\,000 + 0.01x$

B: $y = 15\,000 + 0.02x$

C: $y = 12\,000 + 0.03x$

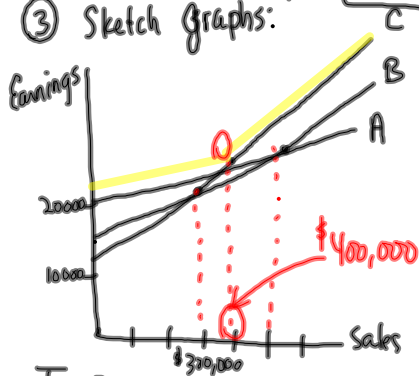
② Find the intersection points:

A and B
 $20\,000 + 0.01x = 15\,000 + 0.02x$
 $5\,000 = 0.01x$
 $x = \$500\,000$

B and C
 $15\,000 + 0.02x = 12\,000 + 0.03x$
 $3\,000 = 0.01x$
 $x = \$300\,000$

A and C
 $20\,000 + 0.01x = 12\,000 + 0.03x$
 $8\,000 = 0.02x$
 $x = \$400\,000$

③ Sketch Graphs:



④ Final Answer:

Package A is best for sales up to \$400 000 and Package C is best for sales over \$400 000.

To Do

① Pass in Gw (Supply + Demand)

② Conditional Solution Practice.