

More Conditional Solutions

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

- A: \$20,000 salary plus 1% of your sales
- B: \$15,000 salary plus 2% of your sales
- C: \$12,000 salary plus 3% of your sales

Which option is the best and under what circumstances?

Your total earnings depend on the sales
 (y) (x)

let x be the sales you make
 y be the total earnings

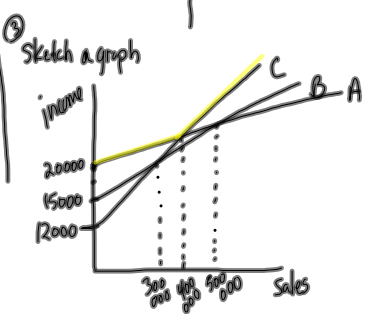
Equations

- A: $y = 0.01x + 20000$
- B: $y = 0.02x + 15000$
- C: $y = 0.03x + 12000$

When are the plans equal?

<p><u>A and B</u></p> $0.01x + 20000 = 0.02x + 15000$ $5000 = 0.01x$ $x = \$500,000$	<p><u>B and C</u></p> $0.02x + 15000 = 0.03x + 12000$ $3000 = 0.01x$ $x = \$300,000$	<p><u>A and C</u></p> $0.01x + 20000 = 0.03x + 12000$ $8000 = 0.02x$ $x = 400,000$
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Plan A and B will have the same earnings when you sell \$500,000 worth of furniture



④ Conclusion
 Choose Salary Package A for sales less than \$400,000. Choose Package C for sales more than \$400,000. Do NOT choose Package B!

Summary of a Conditional Solution Problem

- ① Write the equations for the various plans + be sure to identify your variables.
- ② Find out when the plans cost the same (inter-section points)
- ③ Sketch graph + highlight best plans
- ④ Conclusion