Salary Project

Part 1


Make $50,000 per year
(everyone around you makes $25,000 per year)
OR
Make $100,000 per year
(everyone around you makes $200,000 per year)?
wouldyourathermath.com

You were offered a new job and they are giving you 4 choices for your salary. Which do you pick?

- **Option 1** - $100 000/year
- **Option 2** - $75 000/year with an initial starting bonus of $150 000
- **Option 3** - $45 000 with a 5% yearly raise
- **Option 4** - A one time payment of $1 000 000

Let's talk about %

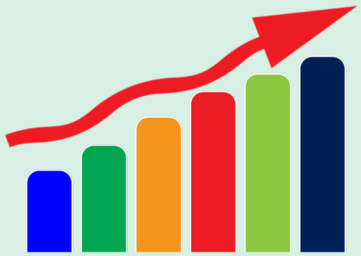
- What does a 5% raise each year mean? Is it the same each year?

- How do we calculate the raise?

Things to Consider

- Does your answer change over time? How?
- How can you use graphs to justify your choice?
- Can you create equations to represent each option?

Requirements



1. Create an equation and table of values for each option
2. Create a graph for each option
    a. Let's discuss - should we show this as 4 separate graphs or 1 graph?
3. Determine a "maximum" value
    a. Is there a point when one option becomes unbeatable?
4. Show a sample calculation for each option in terms of the maximum value
5. Write a justification for which salary you would choose and why

Salary Project

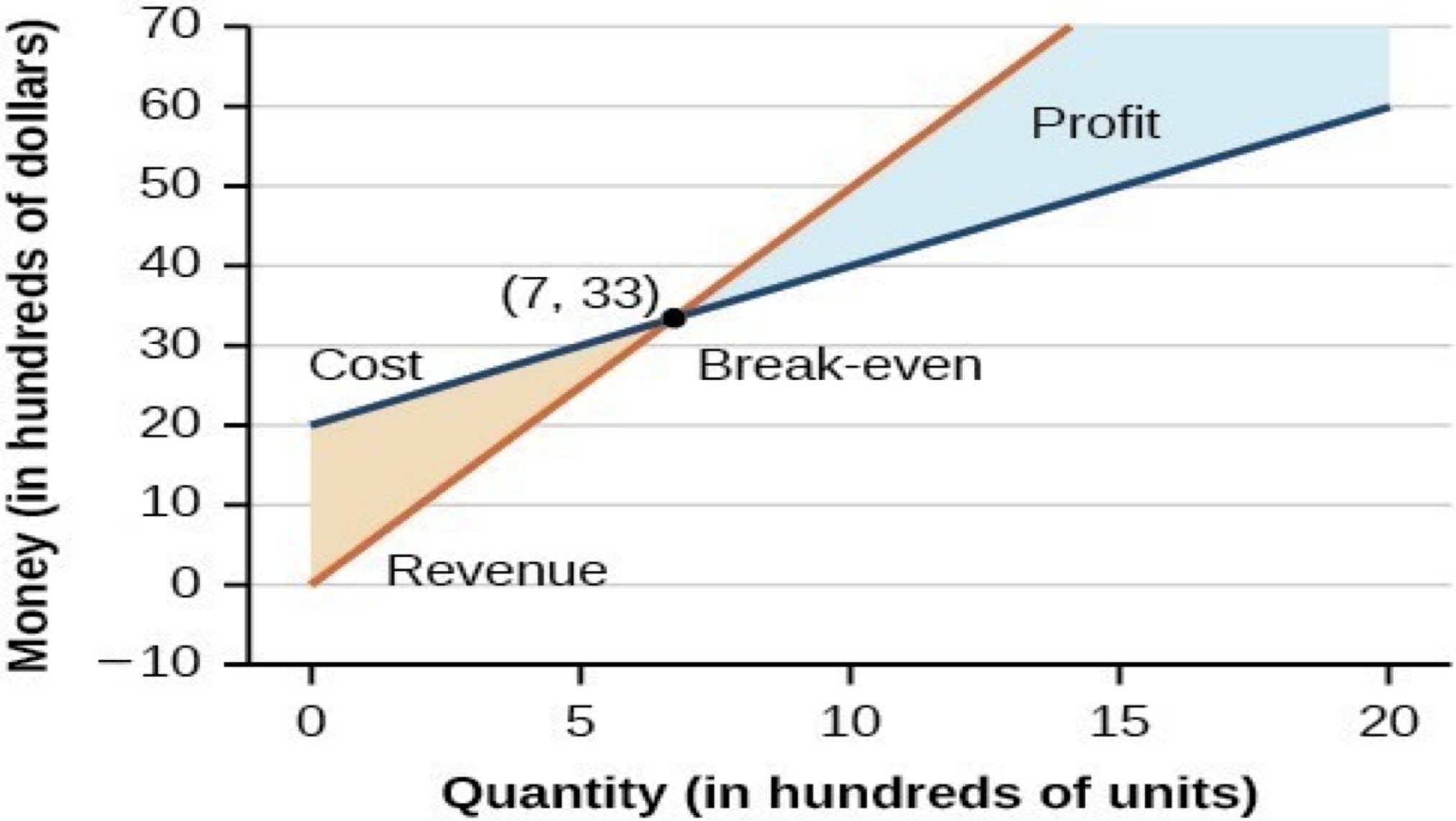
Part 2

You can choose one of the following careers:

- **Teacher -** $49 000
- **Photographer -** $40 000
- **Lawyer** - $118 000
- **Electrician** - $64 000
- **Carpenter**- $72 000
- **Plumbers** - $63 000
- **Librarian** - $56 000
- **Garbage Collector**- $57 000
- **Astronaut** - $72 000
- **Hair Stylist** - $32 000
- **Hotel Manager** - $83 000
- **Historian** - $67 000
- **Bank Teller** - $28 000
- **Painter** - $41 000
- **Architect** - $125 000
- **Musician** - $44 000
- **Chemist** - $72 000
- **Veterinarian** - $92 000
- **Social Worker** - $67 000
- **Nurse** - $76 000
- **Event Planner** - $48 000
- **Air Traffic Controller** - $120 000
- **Writer** - $70 000
- **Geologist** - $130 000

You can draw on of the following amounts of student loans:

- **Option 1** - Average - $28 000
- **Option 2** - Ivy League - $36 000
- **Option 3** - PhD - $132 000
- **Option 4** - Scholarship Collector - +$6000
- **Option 5** - Helping Hand - +$20 000
- **Option 6** - Fresh Start - $20


Money (in hundreds of dollars)
70
60
50
40
30
20
10
0
−10
0
5
10
15
20
Quantity (in hundreds of units)
Profit
(7, 33)
Cost
Break-even
Revenue

You must graph two of the following annual lifestyles for 45 years (one above, and one below your salary):

- **1** - Wingin' It (no wings though)- $4 000
- **2** - Frugal - $27, 000
- **3** - Average Adult - $40, 000
- **4** - Socialite - $75, 000
- **5** - Baller - $186,000

Task

1. Show the following through tables
    a. Total career earnings over 45 years
    b. Total expenses over 45 years (for each lifestyle selected)
    c. Net income over 45 years (for each lifestyle selected)
2. Create an expression for each table
3. Create two graphs, one for each lifestyle to show the financial situation
4. Explain whether or not you think this a good career choice based on the data.

Extensions:

- Map out other careers and explain which you would choose based on the data
- Map out other lifestyle choices and explain how financial success does not rely only on having a good career
- Map out different starting conditions and explain how much of a difference they seemed to make overall

Outcomes	1	2	3	4
Patterns and Relations				
Graph and analyze two-variable linear relations. (PR1, N7)	Evaluate an expression for a given value Use preservation of equality to solve simple equations	Use a given equation for a two-variable linear relation to create a table of values and graph the relation limited to the first quadrant Write an expression to represent the relation shown in a table of values or graph	Use a given equation for a two-variable linear relation and apply integer operations to create a table of values and graph the relation in all quadrants Determine the missing value in an ordered pair for a given equation Determine the equation for a two-variable linear relation given the graph or the table of values Explain why the linear relation for a given scenario would be represented with discrete data	Apply flexible and efficient strategies to relate multiple representations of two-variable linear relations including description of a context, equation, table of values and a graph Create and analyze equations to solve problems involving linear relations

Athletes and Influencers (If you want one, do both)

Professional Athlete

Salary: $9, 500, 000

Expenditure: $500, 000 a year

Starting Condition: Helping Hand (+$20 000)

Average career length: 5 years

Influencer

Salary: $138, 000

Expenditure: Select one

Starting Condition: Helping Hand (+$20 000)

Average career length: 8 years

Athletes and Influencers

1. Show the following through tables
    a. Total career earnings over 45 years
    b. Total expenses over 45 years
    c. Net income over 45 years
2. Create two expressions for table 3
    a. One during the career
    b. One after retirement
3. Create a graph showing the data from the 3 tables
4. Explain whether or not you think this a good career choice based on the data (4-5 sentence paragraph - reference at what point a career becomes better than the other; what if I want to retire earlier?)
5. Repeat for the other career.