

Calculate the y-intercept:

1.

x	y
8	-9
12	-12
16	-15
20	-18

Handwritten notes: 0, 4, -3, -6, -4, +3, +3

y-intercept: (0, -3)

2.

x	y
6	35
9	53
12	71
15	89

Handwritten notes: 0, 3, -1, 17, -3, -18, -18

y-intercept: (0, -1)

3. Josh received a gift card to the local movie theater. After going to 2 movies, the balance of her gift card dropped to \$64. After going to 3 more movies, the balance of her gift card dropped to \$40 remaining. What was her original gift card balance? Express your answer in real world terms and as a y-intercept.

0	80
1	72
2	64
3	56
4	48
5	40

$$\frac{64 - 40}{2 - 5} = \frac{24}{-3} = -8 \text{ per movie seen}$$

The balance was \$80 originally.
 (0, 80)

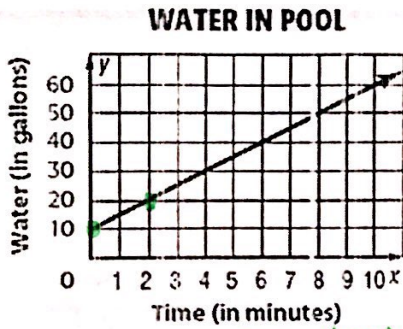
4. The cost to ship a package in the mail includes a basic shipping charge plus an additional cost per number of pounds the package weighs. A three pound package costs \$6.30 to ship. A ten pound package costs \$14 to ship. What is the cost per pound and what is the basic shipping charge?

0	3.00
1	4.10
2	5.20
3	6.30
4	7.40
5	8.50
6	9.60
7	10.70
8	11.80
9	12.90
10	14.00

$$\frac{14.00 - 6.30}{10 - 3} = \frac{7.70}{7} = \$1.10 \text{ per pound shipped}$$

The basic shipping cost is \$3.00.

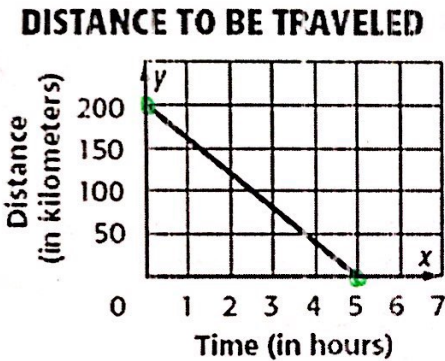
5. Ryan is adding water to his swimming pool. The graph below shows the amount of water in the pool as more water is added. How fast is Ryan adding water to the pool? How many gallons were in the pool to start?



There were 10 gallons in the pool to start. Ryan is adding 5 gallons every minute.

$$\text{Slope: } \frac{10 \text{ gallons}}{2 \text{ minutes}} = \frac{5 \text{ gallons}}{1 \text{ minute}}$$

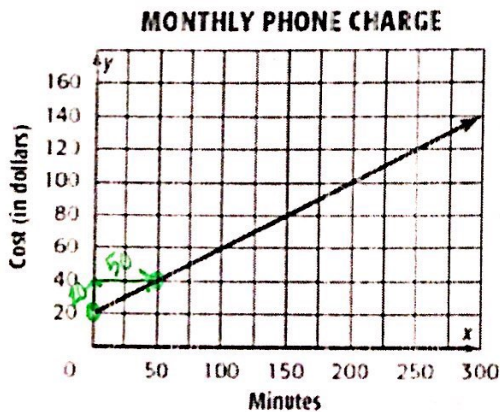
6. Frank is planning to drive his car on the Overseas Highway, the scenic road that connects the islands in the Florida Keys to the Florida mainland. Calculate the slope and y-intercept and interpret what they mean according to the problem scenario.



- The y-int is (0, 200), which means they are 200 miles away, when they first started their drive.
- The slope is -40 km per hour, which means he travels 40 km per hour to reach his destination.

$$\text{Slope: } \frac{-200 \text{ km}}{5 \text{ hours}} = \frac{-40 \text{ km}}{1 \text{ hour}}$$

7. The graph below represents Sarah's monthly phone charge; a monthly fee plus a charge for each minute she uses her phone. How much is the monthly fee and how much does she pay per minute?



The monthly fee is \$20.
Sarah pays \$0.40 per minute.

$$\text{Slope: } \frac{\$20}{50 \text{ minutes}} = \$0.40 \text{ per minute}$$