

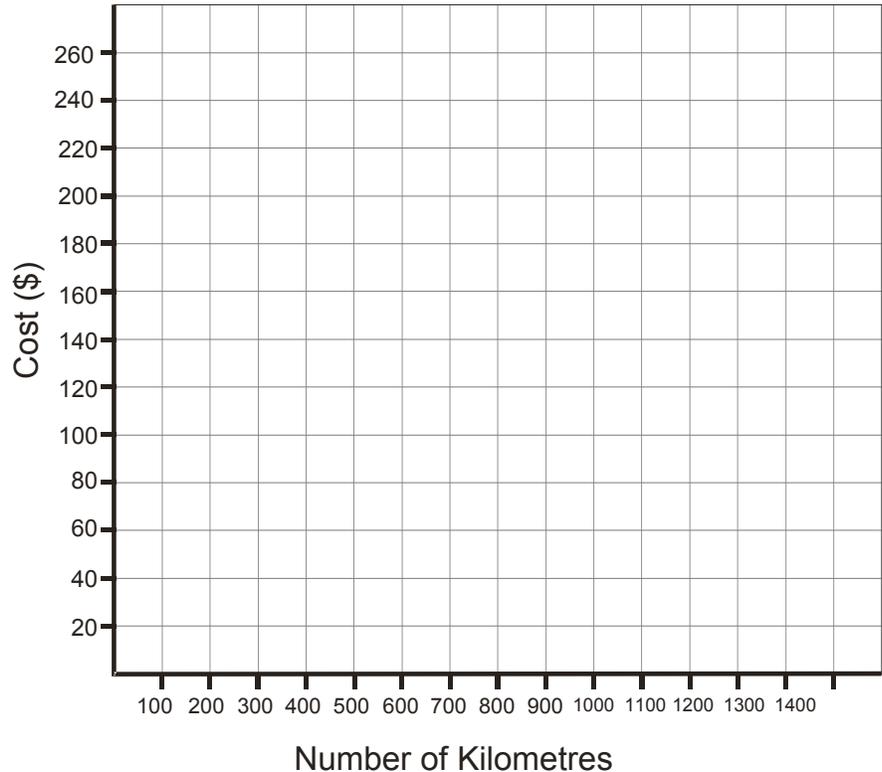
# Representations of Linear Relations



1. A rental car costs \$50 per day plus \$0.20 for each kilometre it is driven.
- What is the dependent variable?
  - Make a table of values for the rental fee up to 1000 km.
  - Graph the relationship.

Number of Kilometres	Cost (\$)

**Cost vs. Number of Kilometres**



- d) Write an equation to model the relationship.  $C$  is the cost and  $n$  is the number of kilometres.

\_\_\_\_\_ = \_\_\_\_\_

- e) Does this relation represent a partial or direct variation? Explain.

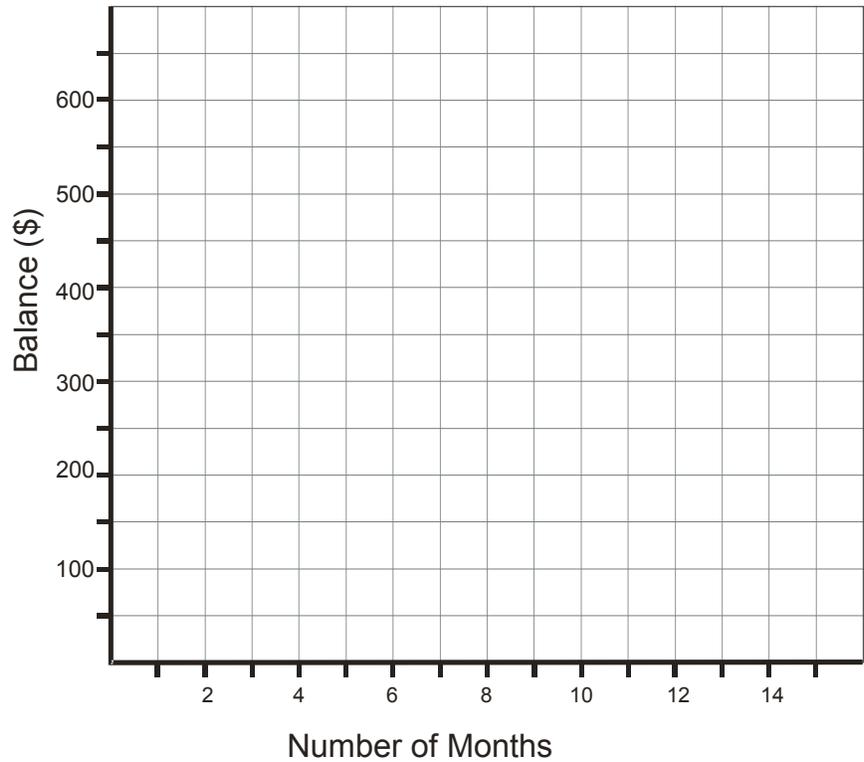
- f) Determine the rental fee for 45 km. Show your work.

- g) Estimate when the car will cost \$175 using your graph or table. Find how close your estimation is using your equation.

2. There is \$650 in Holly's bank account. She has \$52 taken out from her account each month for a cell phone, but doesn't put any back in.

- a) Make a table of values for up to 12 months.
- b) Graph the relationship.

**Balance vs. Number of Months**



c) Write an equation to model the relationship: \_\_\_\_\_ = \_\_\_\_\_

d) Does this relation represent a partial or direct variation? Explain.

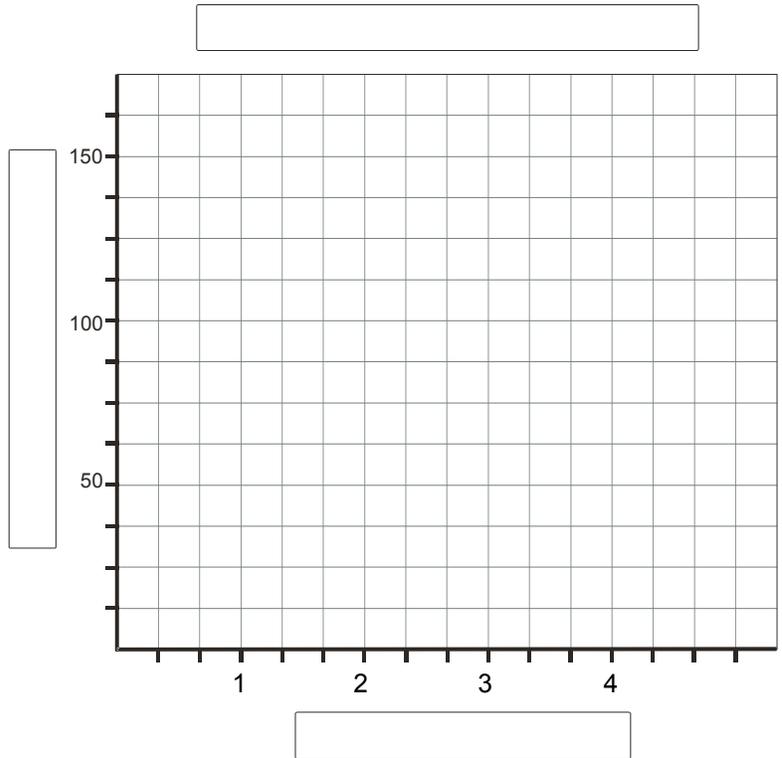
e) How much will Holly have in her account after 8 months? Show your work.

f) How many months will have passed when Holly has no money left in her account? Show your work.

3. Nisha is just learning how to snowboard. White Mountain charges \$25/hour for lessons and \$12.50/hour for snowboard rental.

- a) Make a table of values for up to 4 hours.
- b) Graph the relationship.

Hours	Cost



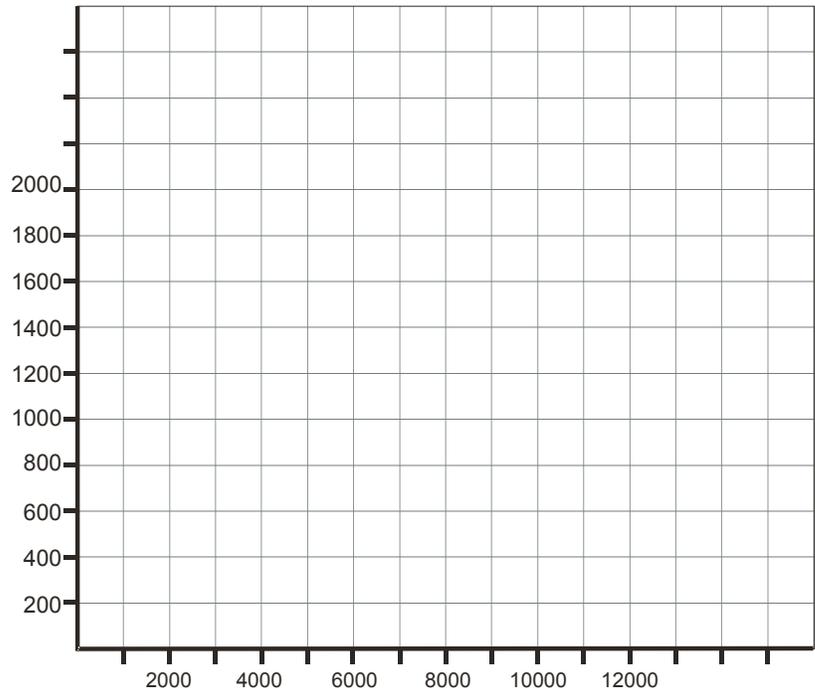
- c) Write an equation to model the relationship:
- d) Does this relation represent a partial or direct variation? Explain.
- e) How much will it cost in total for Nisha to take 2 hours and 45 minutes of lessons? Show your work.
- f) If Nisha paid \$100, estimate how long was she at the White Mountain getting lessons. Show how close your estimation is by using your equation to verify.

4. Ishmal sells high-definition televisions. He is paid a weekly salary of 20% commission of his total weekly sales.

- a) Complete the table of values.
- b) Graph the relationship.



Weekly Sales (\$)	Total Pay (\$)
0	
1000	
2000	
3000	
4000	



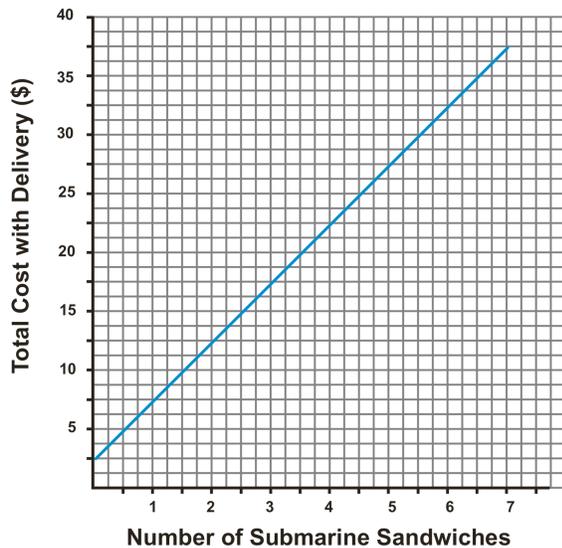
- c) Write an equation to model the relationship:
- d) Does this relation represent a partial or direct variation? Explain.
- e) Determine Ishmal's pay if his sales for the week were \$8000. Show your work.
- f) Ishmal made \$975. How much were his weekly sales? Show your work.

Given the words statements, graphs or tables below, find an **equation** that would model them.

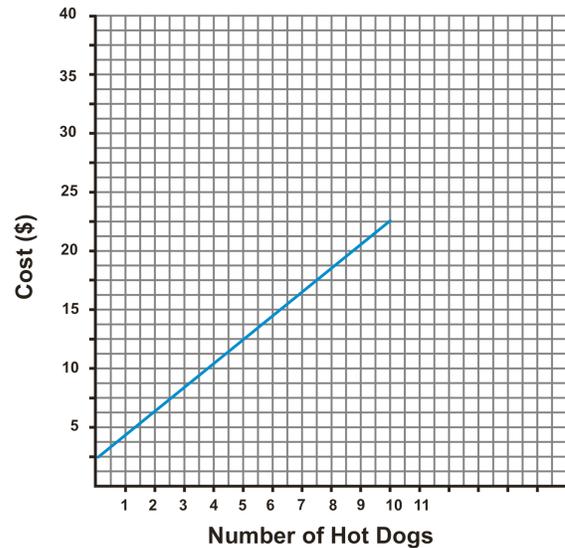
1. A family meal deal at Chicken Deluxe costs \$26, plus \$1.50 for every extra piece of chicken added to the bucket.

2. A Chinese food restaurant has a special price for groups. Dinner for two costs \$24 plus \$11 for each additional person.

3. **Total Cost of Submarine Sandwiches**



4. **Total Cost of Hot Dogs at the Baseball Game**



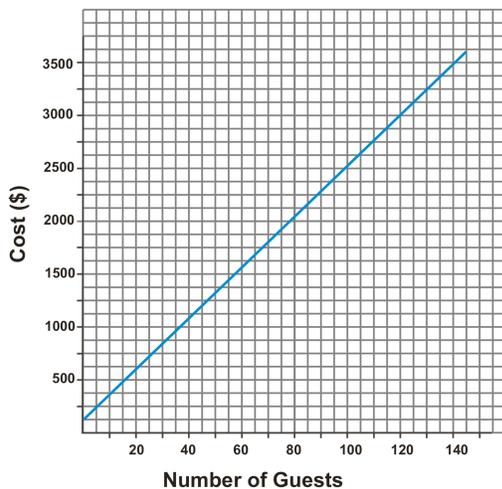
5.

Number of Toppings	Cost of a Large Pizza (\$)
1	11.50
2	13.60
3	15.70

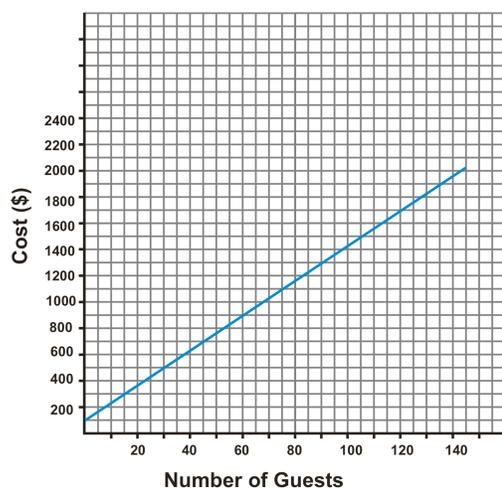
6.

Number of Scoops	Cost of Ice Cream with Sugar Cone (\$)
1	2.00
2	2.75
3	3.50

7. **Cost of Holding a Wedding at a Hotel**



8. **Cost of Holding a Formal at a Banquet Hall**



9.

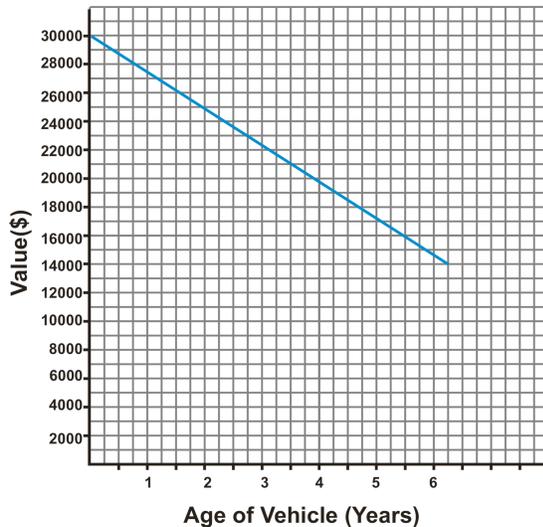
No. of Athletes	Cost of Attending a Hockey Tournament
5	1075
10	2150
20	4300

10.

Number of People	Cost of Holding an Athletic Banquet
50	525
80	795
100	975

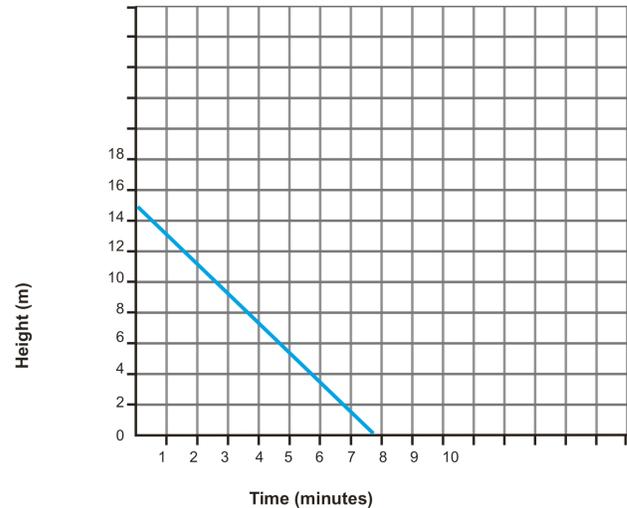
11.

Depreciated Value of a Mid-size Car



12.

Height of a Balloon



13. A banquet hall charges a constant rate for the number of guests at a wedding plus \$750 to rent the hall. For one wedding the banquet hall charged \$2500 for 50 guests.

14. Rent a car for the weekend costs \$50 plus a certain amount per kilometre. Mr. Smith rents a car for the weekend and his bill comes to \$122 for 450 kilometres driven.

15.

Distance (km)	Cost of a Taxi Fare (\$)
0	3.50
5	6.50
10	9.50
15	12.50

16.

Distance (km)	Cost of Bus Charter (\$)
100	210
200	250
300	290
400	330

17. To host an event, a country club charges \$570 for their facilities, \$230 to have a bar setup, plus \$29 per guest for food and \$6 per guest for wait staff.

18. A race car travels at a constant speed of 220km/h. Write an equation for the total distance travelled over time.