Chapter 6 Prerequisite Skills

1. Express each ratio as a decimal number and as a percent.

a) $\frac{1}{2}$

b) $\frac{3}{5}$

c) $\frac{7}{3}$

d) $\frac{12}{4}$

2. What is the unit rate in each scenario?

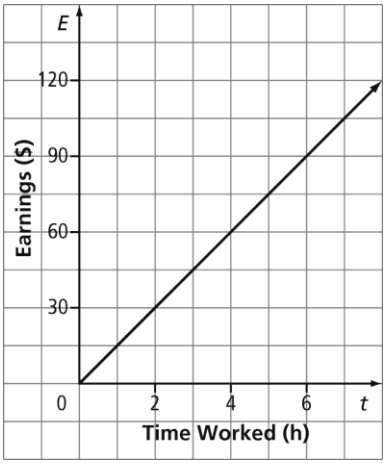
a) A car travels 324 km in 3 h.

b) A hiker reaches a height of 800 m while walking for 5 km.

c) A submarine dives to a depth of 450 m in 9 min.

3. A 12-m tree casts a shadow that is 4.1 m long. What is the height of a fence post that casts a shadow that is 0.68 m long?

4. The graph shows the relationship between earnings and time.



a) Copy the table. Use the graph to help you complete the table.

Time Worked, *t* (h)	Earnings, *E* ($)
2	
	60
6	
	105

b) What are the coordinates where the graph intersects the vertical axis? What is the meaning of this point?

5. A plumber charges $65 for any part of the first hour of a repair call and $45 for every additional hour. This relation is shown in the table.

Time Worked, *t* (h)	Cost, *C* ($)
1	65
2	110
3	155

a) Graph the relation.

b) What is the repair cost for a 6-h job?

c) What is the linear equation for the graph?

6. Solve and check.

a) $2.68 = \frac{y}{3}$

b) $\frac{t}{1.6} + 5.9 = -3.2$

c) $-\frac{5}{6} = \frac{r-4}{3}$

d) $\frac{1}{5}n + \frac{3}{2} = \frac{3}{10}n$

7. Rubin works at a football stadium selling hotdogs. He is paid $8/h plus $0.75 commission for every hotdog he sells.

a) How much does Rubin make if he sells 35 hotdogs in 3 h?

b)How many hotdogs would he have to sell to earn $68 in 4 h?

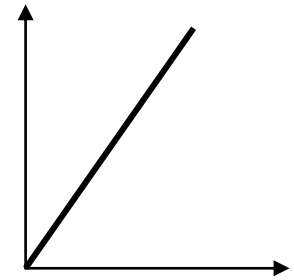
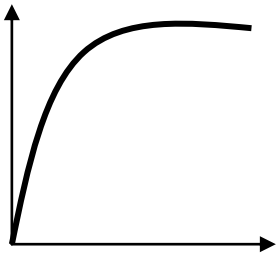
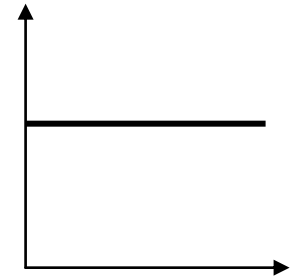
Foundations & Pre-Calculus 10

6.1 Graphs of Relations

Define ***relation***: a connection between 2 quantities.

represent as
- graph.
- table / chart
- ratios
- equations
- lists of paired items.

When looking at the graphs of relations, different trends on the graph reflect different relationships between the quantities being graphed. There are three main types of trends that we will observe:

SAMPLE DRAWING	WHAT IT MEANS	EXAMPLE SITUATION
	constant rate of change	- money per hour at a job. - distance travelled at the same speed over time.
	- changing but not at a constant rate	- heating water to boiling.
	- no change at all. - constant value. rate = 0	- where the 2 quantities are not really related