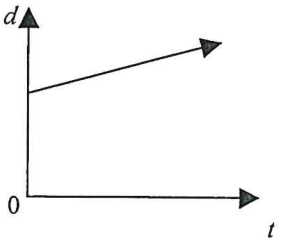
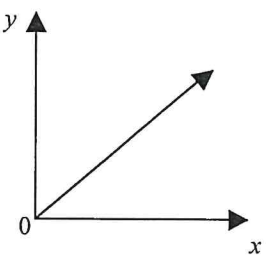
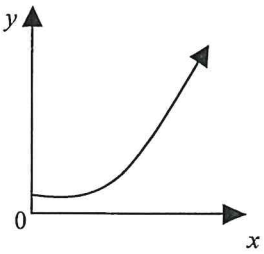
1) Classify each relation as a direct variation, a partial variation, or neither. Explain your answer.

a) 


b) 

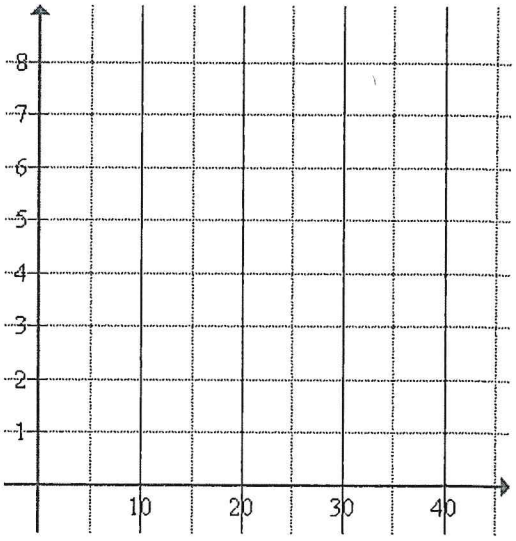

c) 


2) Classify each relation as a direct variation, a partial variation, or neither. Explain your answer.

a) d = 5t b) C = 140n + 300 c) v = 2.5t + 4 d) p = 4s

3) Scuba divers experience an increase in pressure as they dive below sea level. The atmospheric pressure (atm) at various depths (metres, below sea level) is shown.

| Depth (m) | Pressure (atm) |
|---|---|
| 0 | 1 |
| 10 | 2 |
| 20 | 3 |
| 30 | 4 |




a) Graph pressure versus depth.

b) Is this a direct or partial variation? Explain.

c) Use your graph to determine the atmospheric pressure at a depth of 25 m.

d) Scuba divers begin to feel dizzy when pressure exceeds 5 atm. What depth limit would you advise for scuba divers?

4) The cost to rent a snowboard for one day is $40. You can rent it for extra days at a reduced cost, as shown.

| Number of Extra Days | Cost ($) |
|---|---|
| 0 | 40 |
| 1 | 55 |
| 2 | 70 |
| 3 | 85 |

a) What is the cost for each extra day?

b) What is the fixed part of this variation?

c) What is the variable part of this variation?

d) Write an equation to express cost, C, in terms of additional days, d.

e) Use you equation to calculate the rental cost for a total of 8 days.

f) What other option might be worthwhile, instead of renting a snowboard for 8 days?

**Answers:**

1. a) partial because it does not go through the origin b) direct because it goes through the origin
   c) neither because it is not a straight line
2. a) and d) direct because there is no initial value b) partial because there is an initial value of 300
   c) partial because there is an initial value of 4
3. b) partial because the line does not go through the origin c) 3.5 atm d) 40 m
4. a) $15 b) 40 c) 15 d) C=15d+40 e) $160 f) buy one