

- 1) Draw a possible graph of a linear function with the following conditions:  
 a)  $m = 0$   $b > 0$                       b)  $m > 0$   $b < 0$                       c)  $m < 0$   $b > 0$
- 2) Having left home in a hurry, I'd only gone a short distance when I realized that I did not have my calculus book. I stopped for a few minutes until I remembered that I had left it at home, so I went back to retrieve it. I then set out immediately. Sketch a graph of my distance from home as a function of time.
- 3) Which of the following tables of values corresponds to a linear function? Explain! If linear, find its equation.

a)

<del>7</del>	<del>4</del>
2	-3
4	-7
6	-11
8	-15

b)

<del>7</del>	<del>4</del>
2	-3
4	-15
6	-35
8	-63

- 4) Sketch a possible graph for a function that is decreasing everywhere, concave up for negative  $x$  and concave down for positive  $x$ .
- 5) The Gap, Inc. operates nearly 2,000 casual clothing specialty stores. The following table gives the net profit<sup>6</sup> in millions of dollars from 1990 to 1997.
- Find the change in net profit between 1993 and 1996.
  - Find the average rate of change in net profit between 1993 and 1996. Give units and interpret your answer.
  - From 1990 to 1997, were there any one-year intervals during which the average rate of change was negative? If so, when?

Year	1990	1991	1992	1993	1994	1995	1996	1997
Net profit (\$ million)	144.5	229.9	210.7	258.4	350.2	354.0	452.9	530.0

- 6) The position,  $d = s(t)$ , of a car is given in Table 1.10. Give units with each answer.
- Find the average velocity of the car between  $t = 0$  and  $t = 15$  and between  $t = 10$  and  $t = 30$ .
  - Find the distance traveled by the car between  $t = 10$  and  $t = 30$ .

TABLE 1.10

$t$ (sec)	0	5	10	15	20	25	30
$s(t)$ (ft)	0	30	55	105	180	260	410