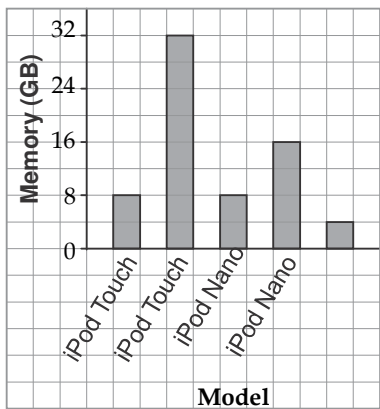# Relations and Functions Review - Chapter 5

1. Consider the relation represented by this graph.

Memory of iPods in 2010

a) Represent the relation as a table.

Model	Memory (GB)

b) Describe the relation in words.

The relation shows the association _____from a set of _____to a set of _____.

c) List 2 ordered pairs that belong to the relation.

_____

2. Which sets of ordered pairs represent functions? Circle the correct answers.

a) {(1, 1), (−1, 1), (2, 4), (−2, 4)}

b) {(2, 3), (2, 4), (2, 5), (2, 6)}

3. Write each equation in function notation.

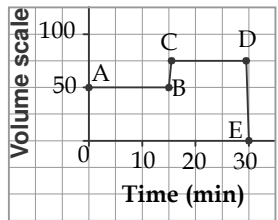a) $y = 7x - 2$
b) $C = 15n + 50$

4. For the function $g(x) = -x + 9$, find:

a) $g(5)$
b) the value of x when $g(x) = 12$

5. Describe a possible situation for this graph.

Sound Volume of Toby's Television

Complete the table below by describing each segment of the graph, and describing a possible situation for each segment.
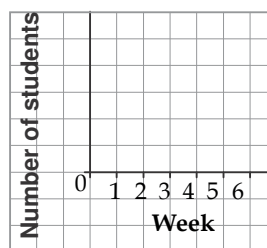
Segment	Description	Possible Situation
AB		
BC		
CD		
DE		

6. This table shows the attendance for a weekly after-school yoga class.
   a) Graph the data.

Week	Number of students
1	20
2	25
3	25
4	20
5	15
6	10

Choose a scale for the vertical axis.

**Attendance at the
After-School Yoga Class**

Number of students

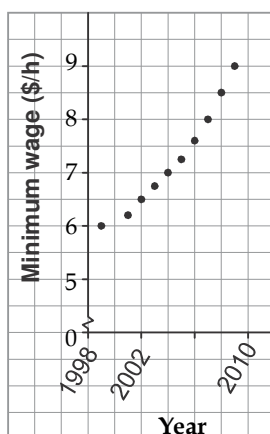0 1 2 3 4 5 6

Week

b) Does it make sense to join the points? Explain.
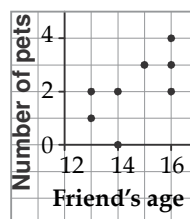
c) Is the relation a function? Explain.

d) What is the domain?
What is the range?

7. Decide whether each graph represents a function.

a) The Minimum Wage in Manitoba

Minimum wage ($/h)

9
8
7
6
5
0

1998   2002   2010

Year

**b) Number of Pets
My Friends Have**

Number of pets

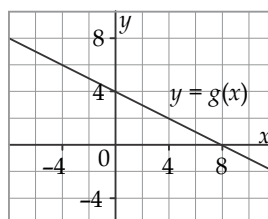4
2
0
12   14   16

Friend's age

*Draw vertical lines
to help you decide.*

8. Here is the graph of a function $y=g(x)$.

Determine the range value when
The domain value is –4.

The range value is: ___

y

8

4   $y = g(x)$

x

–4   0   4   8

–4

b) Find the domain value
when the range value is
2.

The domain value is: ___

9. Does each table of values represent a linear relation?
   Circle the correct answers.

a)

Number, n	Profit, P
20	10
40	20
60	30
80	40
100	50

b)

Time, t	Distance, d
0	5
4	9
8	13
12	17
16	21

c)

x	y
1	4
2	7
3	12
4	19
5	28

    linear   not linear   linear   not linear   linear   not linear

10. Does each equation represent a linear relation?

a) $y = 5x$

Make a table of values.

x	Substitution	y
2	5(2)	
1		

Plot the points on the grid.

Do the points lie on a straight line? _____
Does $y=5x$ represent a linear relation? _____
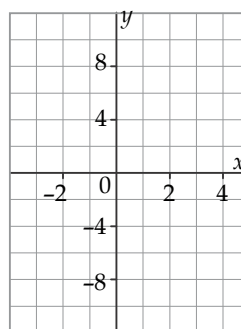
b) $y = 2x^2 + 2$

Make a table of values.

x	Substitution	y
2		
1		

Plot the points on the grid.

Does $y = 2x^2 + 2$ represent a linear relation? _____
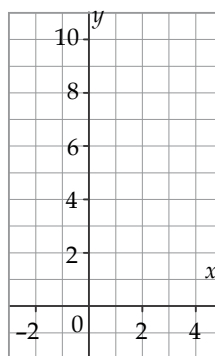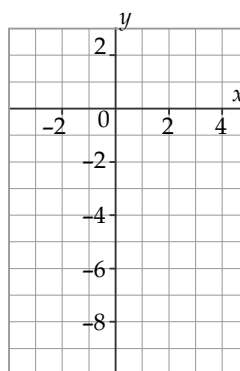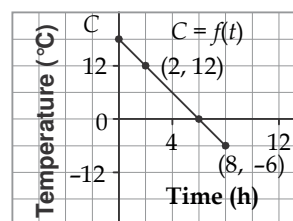
11. Use intercepts to sketch the linear function $y = -2x - 6$.
    Find the intercepts and the coordinates of a 3rd point on the line.

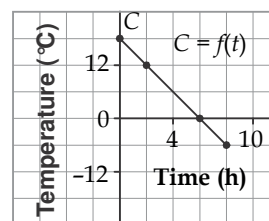|	When...	Then...
y-intercept		
x-intercept		
3rd point		

12. This graph shows the temperature at a location over time.

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1. **a)** 1ˢᵗ column: iPod Touch; iPod Touch; iPod Nano; iPod
   Nano; iPod Shuffle; 2ⁿᵈ column: 8, 32, 8, 16, 4
   b) The relation shows the association "has a memory of"
   from a set of iPods to a set of numbers of gigabytes.
2. **a)** Function　　　　**b)** Not a function
3. **a)** $f(x) = 7x - 2$　　**b)** $C(n) = 15n + 50$
4. **a)** 4　　　　　　　　**b)** –3
5. The graph shows how the volume of Toby's television
   changes over time.

6. **b)** No, because there is no such thing as a fraction of a
   student.
   d) Domain: {1, 2, 3, 4, 5, 6}; range: {10, 15, 20, 25}
7. **a)** Function　　　　　　　**b)** Not a function
8. **a)** 6　　　　　　　　　　**b)** 4
9. **a)** Linear　　**b)** Linear　　**c)** Not linear
10. **a)** Yes　　　　　　　　　**b)** No
12. **a)** Vertical intercept: 18; horizontal intercept: 6
    b) Domain: $0 \le t \le 8$; range: $-6 \le C \le 18$
    c) –3°C/h