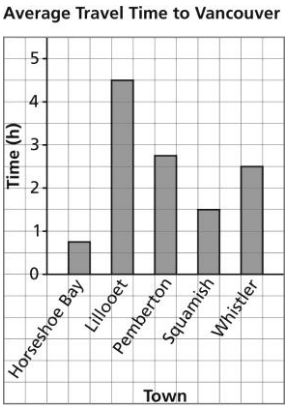
MATH 1201 – CH 5 REVIEW **NAME: _____**

1. Animals can be associated with the classes they are in.

Animal	Class
ant	Insecta
eagle	Aves
snake	Reptilia
turtle	Reptilia
whale	Mammalia

a) Describe this relation in words.
b) Represent this relation:
i) as a set of ordered pairs
ii) as an arrow diagram

2. Different towns in British Columbia can be associated with the average time, in hours, that it takes to drive to Vancouver.
Consider the relation represented by this graph.



Represent the relation:

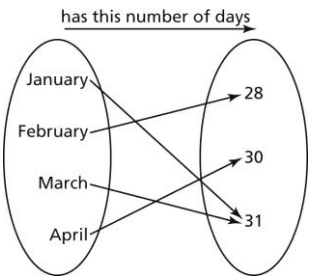
a) as a table
b) as an arrow diagram

3. For each relation below:

- Determine whether the relation is a function. Justify your answer.
- Identify the domain and range of each relation that is a function.

a) A relation that associates a number with a prime factor of the number:
{(4, 2), (6, 2), (6, 3), (8, 2), (9, 3)}

b)



4. The table shows the costs of student bus tickets, C dollars, for different numbers of tickets, n.

Number of Tickets, n	Cost, C ($)
1	1.75
2	3.50
3	5.25
4	7.00
5	8.75

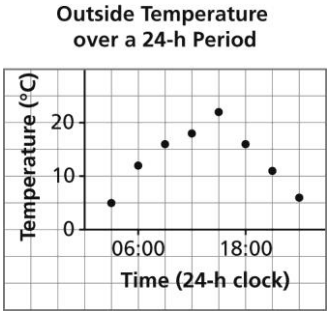
a) Why is this relation also a function?
b) Identify the independent variable and the dependent variable. Justify your choices.
c) Write the domain and range.

5. The equation $C = 25n + 1000$ represents the cost, C dollars, for a feast following an Arctic sports competition, where n is the number of people attending.

a) Describe the function. Write the equation in function notation.
b) Determine the value of $C(100)$. What does this number represent?
c) Determine the value of n when $C(n) = 5000$. What does this number represent?

6. Which of these graphs represents a function? Justify your answer.

a)



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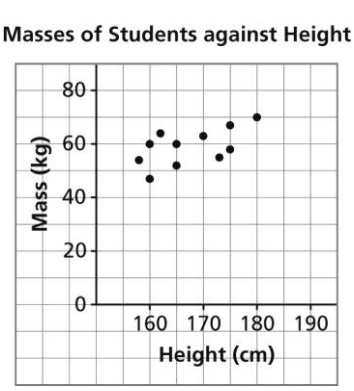
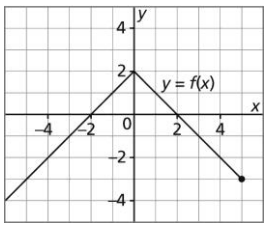
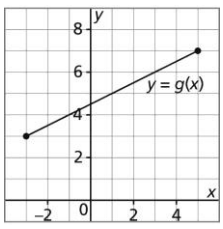


7. Determine the domain and range of the graph of each function.

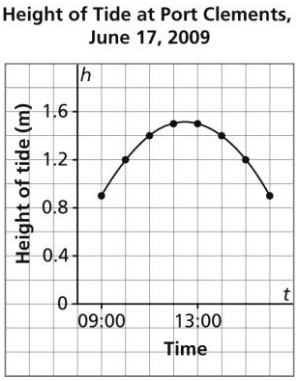
a)



b)



8. This graph shows the approximate height of the tide, *h* metres, as a function of time, *t*, at Port Clements, Haida Gwaii on June 17, 2009.



a) Identify the dependent variable and the independent variable. Justify your choices.
b) Why are the points on the graph connected? Explain.
c) Determine the domain and range of the graph.

9. Which table of values represents a linear relation? Justify your answer.

a) The relation between the number of bacteria in a culture, *n*, and time, *t* minutes.

t	*n*
0	1
20	2
40	4
60	8
80	16
100	32

b) The relation between the amount of goods and services tax charged, *T* dollars, and the amount of the purchase, *A* dollars

A	*T*
60	3
120	6
180	9
240	12
300	15

11.a) Graph each equation.

i) $x = -2$ **ii)** $y = x + 25$ **iii)** $y = 25$ **iv)** $y = x^2 + 25$

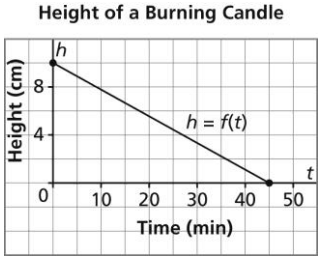
b) Which equations in part a represent linear relations? How do you know?

12. Which relation is linear? Justify your answer.

a) A dogsled moves at an average speed of 10 km/h along a frozen river. The distance travelled is related to time.

b) The area of a square is related to the side length of the square.

13. This graph shows how the height of a burning candle changes with time.



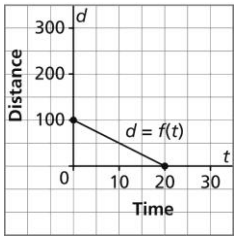
a) Write the coordinates of the points where the graph intersects the axes. Determine the vertical and horizontal intercepts. Describe what the points of intersection represent.

b) What are the domain and range of this function?

14. Sketch a graph of the linear function $f(x) = 4x - 3$.

15. Which graph has a rate of change of –5 and a vertical intercept of 100? Justify your answer.

a)



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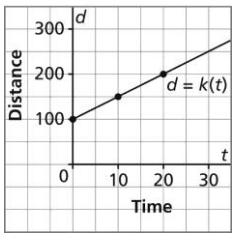

16. This graph shows the total cost for a house call by an electrician for up to 6 h work. The electrician charges $190 to complete a job. For how many hours did she work?