The Dragon Academy

G11 Functions and Applications

Term 4

Homework 2

Due date: Thu. 23 2019

May 21, 2019

1 Problems

This is a set of exercises to review the main concepts we have seen in this course and are needed for the coming classes.
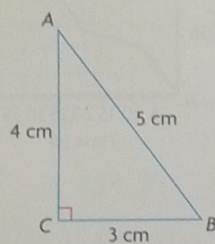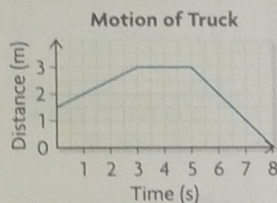
From our book: Page 322, Exercises: 3-8.

Below you have a picture of the statements.

3. Determine the transformations you would apply to $y = x^2$ to graph each of the following.

a) $y = 3(x - 5)^2 + 4$ c) $y = 0.5(x + 1)^2 - 3$

b) $y = 2(x - 2)^2 + 1$ d) $y = -\dfrac{1}{4}(x + 2)^2 - 4$

PRACTICE

Motion of Truck

4. Earl operates a remote-control truck in front of a motion detector. He moves the truck either toward or away from the detector, never right or left. The graph shows the distance between the truck and the motion detector at regular time intervals.

a) Determine each value, including units, and explain what they represent in this situation:
   i)   the slope of the line between $t = 0$ and $t = 3$
   ii) the distance intercept
   iii) the slope of the line between $t = 3$ and $t = 5$
   iv) the time intercept

b) State the domain and range of this function.

5. Determine the values of $\sin A$, $\cos A$, and $\tan A$ in $\triangle ABC$ at the left.

6. Use transformations of the graph of $f(x) = x^2$ to sketch the graphs of each of the following.

a) $y = f(x) + 2$ c) $y = f(x - 1)$
b) $y = 2f(x)$ d) $y = -f(x)$

7. For each function, determine the **maximum** or the **minimum** value, identify the **zeros**, and state the **domain** and **range**.

a)

b)
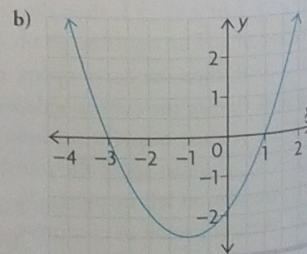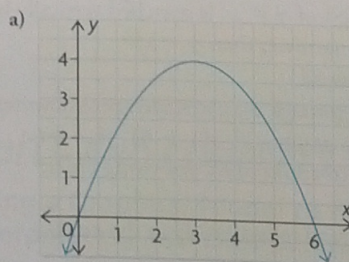
8. Complete a chart like the one below to show what you know about the term *function*.

Definition:		Ways to Test:
	Function	
Example:		Non-examples: