Are there any questions from last day's assigned work you would like to see on the board?

Last day's assigned work: **READ pp. 66-67**
pp. 68–69 # 1 – 10
p. 70 # 1 – 4, 5abc, 6

Return and Correct SWYK 1.2 ?

p. 68

1. The data in the table show the average mass of a boy as he grows between the ages of 1 and 12. State the following:

a) domain

b) range

c) whether the relation is a function

Age (years)	1	2	3	4	5	6
Mass (kg)	11.5	13.7	16.0	20.5	23.0	23.0

Age (years)	7	8	9	10	11	12
Mass (kg)	30.0	33.0	39.0	38.5	41.0	49.5

2. Determine, without graphing, which type of relationship (linear, quadratic, or neither) best models this table of values. Explain.

x	−1	0	1	2	3
y	1	2	−3	−14	−31

p. 68 **3.** State the degree of each function and whether each is linear, or quadratic, or neither.

a) $f(x) = -8 + 3x$

b) $g(x) = 4x^2 - 3x + 5$

c) $y = (x - 4)(4x^2 - 3)$

4. Evaluate the function $f(x) = 3x^2 - 3x + 1$ at the given values.

a) $f(-1)$ b) $f(3)$ c) $f(0.5)$

5. For each of the following, determine $f(3)$.

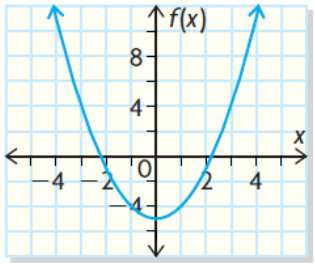
a) $f = \{(1, 2), (2, 3), (3, 5), (4, 5)\}$

b)

x	1	3	5	7
$f(x)$	2	4	6	8

c) $f(x) = 4x^2 - 2x + 1$

d)



p. 68 **6.** Use transformations to determine the vertex, axis of symmetry, and direction of opening of each parabola. Sketch the graph.

a) $y = x^2 - 7$

b) $y = -(x + 1)^2 + 10$

c) $y = -\frac{1}{2}(x + 2)^2 - 3$

d) $y = 2(x - 5)^2$

7. Describe how the graph of $y = x^2$ can be transformed to the graphs of the relations from question 6.

8. **a)** Describe how the graph of $y = x^2$ can be transformed into the graph of the given quadratic function.

i) $y = 5x^2 - 4$

ii) $y = \frac{1}{4}(x - 5)^2$

iii) $y = -3(x + 5)^2 - 7$

b) List the domain and range of each function. Compare these with the original graph of $y = x^2$.

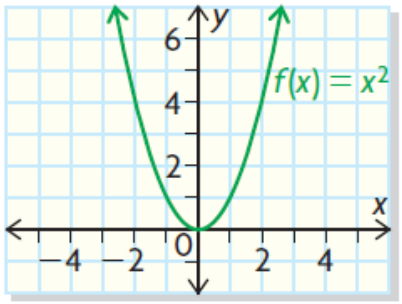
p. 69 **9.** **a)** Describe the transformations to the graph of $y = x^2$ to obtain $y = -2(x + 5)^2 - 3$.

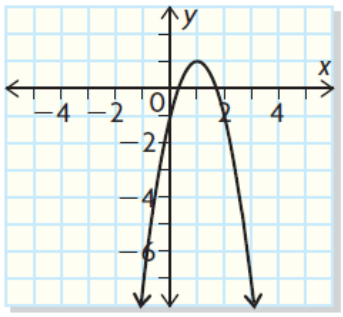
b) Graph $y = x^2$. Then apply the transformations in part (a) to graph $y = -2(x + 5)^2 - 3$.

10. The graphs of $f(x) = x^2$ (in green) and another parabola (in black) are shown.

a) Draw a combination of transformations that would produce the second parabola from the first.

b) Determine a possible equation for the second parabola.





p. 70

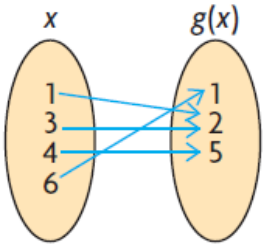
1. For each of the following relations, state

i) the domain and range

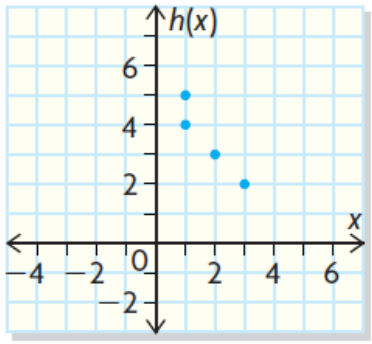
ii) whether or not it is a function, and justify your answer

a) $f = \{(1, 2), (3, 1), (4, 2), (7, 2)\}$

b)



c)



2. Define the term *function* and give an example and a non-example.

3. Use a difference table to determine whether the data in the table at the left represent a linear or quadratic relationship. Justify your decision.

Time (s)	Height (m)
0	0
1	30
2	40
3	40
4	30
5	0

p. 70 **4.** If $f(x) = 3x^2 - 2x + 6$, determine

a) $f(2)$ **b)** $f(x - 1)$

5. $f(x) = 3(x - 2)^2 + 1$

a) Evaluate $f(-1)$.

b) What does $f(1)$ represent on the graph of f?

c) State the domain and range of the relation.

~~**d)** How do you know if f is a function from its graph?~~

~~**e)** How do you know if f is a function from its equation?~~

6. A function is defined by the equation $d(x) = 5(x - 3)^2 + 1$.

a) List the transformations to the graph of $f(x) = x^2$ to get $d(x)$.

b) What is the maximum or minimum value of the transformed function $d(x)$?

c) State the domain and range of $d(x)$.

d) Graph the function $d(x)$.

Today's Learning Goal(s):

Date: Feb. 24/20
(Every lesson)

By the end of the class, I will be able to:

a) multiply 2 binomials.
b) expand and simplify the product of a monomial and two binomials.

2.1 Working with Quadratic Expressions

Recall: When multiplying, multiply the coefficients; and add the exponents if the variables are the same.

Ex.1 Multiply the following.

a) $4x(3x-7)$

$=12x^2-28x$

b) $(3x-2)(4x+5)$ FOIL

$=12x^2+15x-8x-10$

$=12x^2+7x-10$

c1) $(x+1)^2$

$=(x+1)(x+1)$

$=x^2+1x+1x+1$

$=x^2+2x+1$

c2) $(x+3)^2$

$=(x+3)(x+3)$

$=x^2+3x+3x+9$

$=x^2+6x+9$

c3) $(x+5)^2$

$=(x+5)(x+5)$

$=x^2+5x+5x+25$

$=x^2+10x+25$

c4) $(x-4)^2$

$=(x-4)(x-4)$

$=x^2-4x-4x+16$

$=x^2-8x+16$

d) $(3x-4)^2$

$=9x^2-24x+16$

e) $2(x+3)^2$

$=2(x^2+6x+9)$

$=2x^2+12x+18$

f) $-2(x+6)(5x-2)$

$=-2(5x^2-2x+30x-12)$

$=-2(5x^2+28x-12)$

$=-10x^2-56x+24$

g) $5(y-6)(y+2)-(2y+3)(4y-1)$

$=5(y^2+2y-6y-12)-(8y^2-2y+12y-3)$

$=5(y^2-4y-12)-(8y^2+10y-3)$

$=5y^2-20y-60-8y^2-10y+3$

$=-3y^2-30y-57$

Challenge

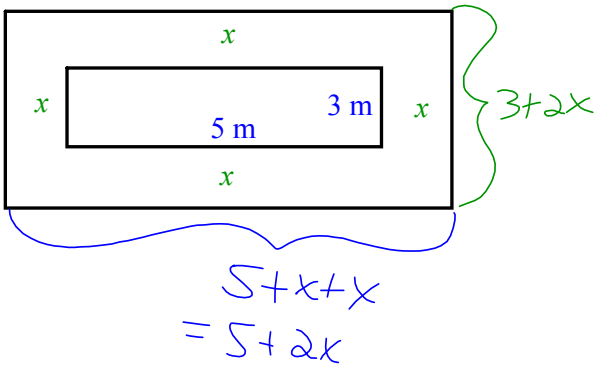
A) $(3x^5y-2x^3y^4z)^2$

$=9x^{10}y^2-12x^8y^5z+4x^6y^8z^2$

B) $(2x^3y-3x^5y^4z)^2$

$=4x^6y^2-12x^8y^5z+9x^{10}y^8z^2$

Ex. 2 Express the area of the large rectangle as a function of x.



$A = \ell w$

$A_{large} = (5+2x)(3+2x)$

$= 15 + 10x + 6x + 4x^2$

$= 4x^2 + 16x + 15$

Be fully prepared for tomorrow's Unit 1 Summative

Assigned Practice: pp.85-87 #2, 3, 5 - 7, 14

Be sure to keep up with your homework....

there is a SWYKs in a few days,

and the next Unit Summative is only 2 weeks away!