MATH ONE-Release Items

1. If the point A = (-4 , 8) and is rotated 90° clockwise about the point (0 , 0), then A' =

    a. (4 , 8)   **b.** (-4 , -8)   **c.** (4 , -8)   **d.** (8 , 4)

2. The point (-4 , 6) is a solution to which of the following system(s)? (Select all that apply.)
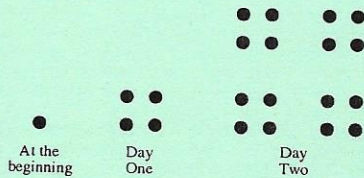
a. $\begin{cases} x + 2y = 8 \\ -4x - y = 10 \end{cases}$

b. $\begin{cases} x + 2y \le 8 \\ -4x - y < 10 \end{cases}$

c. $\begin{cases} x + 2y < 8 \\ -4x - y \ge 10 \end{cases}$

d. $\begin{cases} x + 2y \ge 8 \\ -4x - y \le 10 \end{cases}$

e. $\begin{cases} x + 2y > 8 \\ -4x - y > 10 \end{cases}$

At the beginning   Day One   Day Two

3. The explicit function for the sequence above is:

    a. $f(x) = 3x + 1$ **b.** $f(x) = 1 \cdot 4^x$

    c. $f(x) = 4x - 3$ **d.** $f(x) = \frac{1}{4} \cdot 4^x$

4. Which explicit function best matches the recursive function:

$f(1) = -4 , f(x) = f(x - 1) + 4$?

    a. $f(x) = -4x + 4$ **b.** $f(x) = 4x$

    c. $f(x) = 4x - 4$ **d.** $f(x) = 4x - 8$

Match each equation on the left with its rate of change on the right.

5. $f(x) = -4x + 3$

    a. $-\frac{3}{4}$

6. $3x + 4y = -12$

    b. -4

7. $f(x) = 4 \cdot 3^x$

    c. 4

8. $y = 4(x - 3) + 12$

    d. No constant rate of change

9. On a graph, the equation $f(x) = g(x) - 6$ would mean that

    a. $f(x)$ would be shifted up 6 units from $g(x)$ b. $f(x)$ would be shifted down 6 units from $g(x)$

   c. $f(x)$ would be shifted left 6 units from $g(x)$ d. $f(x)$ would be shifted right 6 units from $g(x)$

Math One Release Items

1. Describe TWO possible details of the transformation.

Note: It is not enough to simply "draw" the transformation. If the object has been translated, write what translation has happened using translation notation. If it has been reflected, write the equation of the line where it has been reflected. If the object has been rotated, provide the center of rotation, the direction, and how far the object has been rotated.
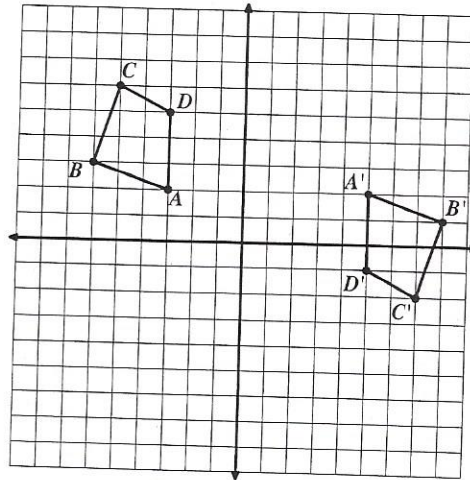
2. Which explicit function best matches the recursive function

$$f(1) = -4, f(x) = f(x-1) + 4 ?$$

a. $f(x) = -4x + 4$

b. $f(x) = 4x - 4$

c. $f(x) = 4x$

d. $f(x) = 4x - 8$

3. Which sequence best matches the explicit function $f(x) = 3 \cdot (-2)^x$

a. $6, -12, 24, -48, 96$

b. $-6, 12, -24, 48, -96$

c. $-2, -6, -18, -54, -162$

d. $-\frac{3}{2}, -2, -18, -54$

4. Which interval, written in Set Notation, matches the following interval written in Interval Notation: $(-\infty, \infty)$?

a. $\{x \mid x \in \mathbb{R}\}$

b. $\{x \mid -\infty \geq x \geq \infty\}$

c. $\{x \mid x \in \mathbb{W}\}$

d. $\{x \mid x < 0\}$

5. If $f(x) = g(x) + 8$, and $f(x) = 4 \cdot 9^x$, then

a. $g(x) = 4 \cdot 9^x + 8$

b. $g(x) = 12 \cdot 9^x$

c. $g(x) = 4 \cdot 9^x - 8$

d. $g(x) = -4 \cdot 9^x$

6. Which of the following words do you *know for certain* describes the following function? Some of the items might apply, select the item that we are certain applies.

x	y
2	-8
5	-23
9	-43
-2	12

a. Linear

d. Continuous

b. Exponential

e. None of the above

c. Increasing

Carmel High School
Math 1