Unit 4 HW 4 Name: Key Period: _____

1. A stone is thrown with an upward velocity of 14 feet per second from a cliff 30 feet high.

   a. Write quadratic equation to represent the situation: $y = -16x^2 + 14x + 30$

      *HINT: $y = -16x^2 + v_0x + c$

   b. What does the -16 represent in the context of the problem? gravity

   c. What does "c" represent in the context of the problem? starting height

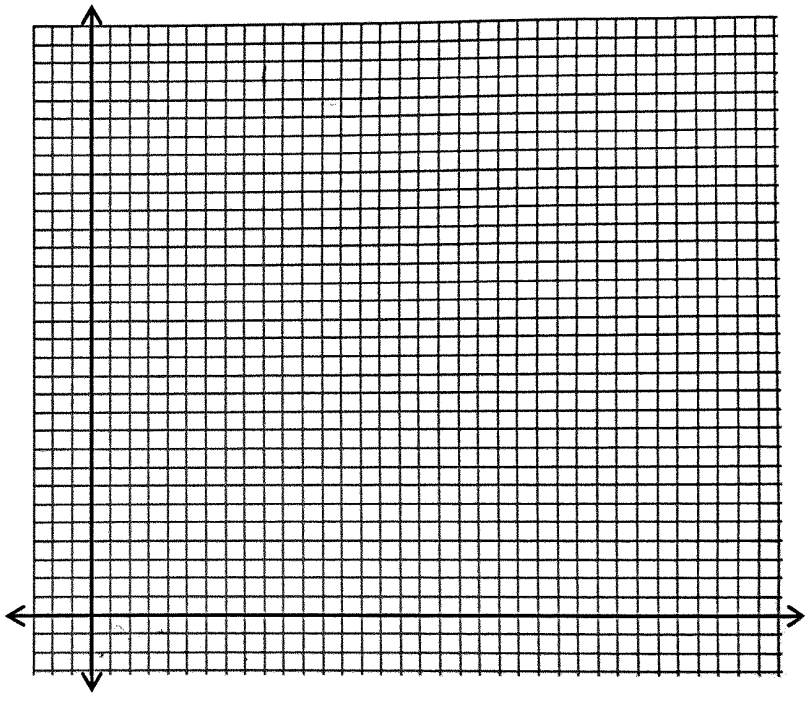
   d. What does "v_o" represent in the context of the problem? initial velocity

2. Graph the quadratic equation. Use at least 5 ordered pairs.

$y = -2x^2 + 8x + 3$

See teacher for the rest

x	y
2	11



3. Convert 85 miles per hour to meters per second. Fill in the blanks with the appropriate ratios (there are 2 filled in already), then simplify. (1 mile = 1609.34 meters)

$$\frac{85\ miles}{1\ hour} * \_\_\_\_\_ * \frac{1\ hour}{60\ minutes} * \_\_\_\_\_ = ?$$

Answer: 37.99 m/sec.

4. Solve. $5(4x - 3) - 8x - 1 = 2(3x + 4) + 4x - 6$

$X=9$

5. With my first year of allowance, I earned \$104. With my second year, I earned \$130. With my third year, I earned \$162.50.

   a. Is this an arithmetic or geometric sequence?

   b. Write an equation to represent this situation. see teacher

   c. If this pattern continued, how much would I earn my 8th year? \$495.91

6. Solve the system of equations using either substitution or elimination.

   $3x + y = -18$

   $4x + 3y = -34$

   $(-4, -6)$