Alg 2 Bellwork Tuesday, January 26, 2016

1. Use these functions: $f(x) = x - 5$ $g(x) = x^2 + 6x$

a) Find $f(g(-4))$

b) Find $g(f(x))$. Simplify as much as possible.

2. Solve for Q. State restrictions on the variables, if any. $W = A\left(\frac{CQ+H}{M} - R\right)$

3. An object is shot into the air from the top of a 60 foot high cliff. The height of the object as a function of time is given by the following equation:

$h(t) = -16t^2 + 240t + 60$. Round answers to the nearest hundredth.

a) Find the maximum height of the object and the time it takes to reach this height.

Max ht =

Time to max ht =

b) Find the time it takes the object to hit the ground.

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1. Use these functions: $f(x) = x - 5$ $g(x) = x^2 + 6x$

a) Find $f(g(-4))$

$g(-4) = (-4)^2 + 6(-4)$ $f(g(-4)) = -8 - 5$

$= 16 - 24$ $= -13$

$= -8$

b) Find $g(f(x))$. Simplify as much as possible.

$= (x-5)^2 + 6(x-5)$

$= x^2 - 10x + 25 + 6x - 30$

$= x^2 - 4x - 5$

2. Solve for Q. State restrictions on the variables, if any. $W = A\left(\frac{CQ+H}{M} - R\right)$

$Q = \frac{\left(\frac{W}{A} + R\right)M - H}{C}$ $M \neq 0, A \neq 0, C \neq 0$

3. An object is shot into the air from the top of a 60 foot high cliff. The height of the object as a function of time is given by the following equation:

$h(t) = -16t^2 + 240t + 60$. Round answers to the nearest hundredth.

a) Find the maximum height of the object and the time it takes to reach this height.

Max ht = 960 ft

Time to max ht = 7.5 s

$\frac{-b}{2a} = \frac{-240}{2(-16)} = 7.5$

(7.5, 960)

b) Find the time it takes the object to hit the ground.

15.25 sec

$0 = -16t^2 + 240t + 60$

$b^2 - 4ac = 61440$ $t = \frac{-240 \pm \sqrt{61440}}{-32} = -.25, 15.25$