Bellwork Alg 2 Monday,November 25, 2019

1. This following equation models the height of an object(ft) as a function of the amount of time(sec) after it has been launched upwards. Round answers to the nearest hundredth.

$h(t) = -16t^2 + 96t + 6$

a) Find the time it takes to reach a height of 200 feet.

b) Find the time it takes to reach a height of 150 feet.

c) Find the time it takes to reach a height of 50 feet.

2. Simplify this product. $(7 + 2i)(5 - 3i)$

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1. This following equation models the height of an object(ft) as a function of the amount of time(sec) after it has been launched upwards. Round answers to the nearest hundredth.

$h(t) = -16t^2 + 96t + 6$

a) Find the time it takes to reach a height of 200 feet.

$h(t) = 200$

$200 = -16t^2 + 96t + 6$

$-200 \quad\quad -200$

$0 = -16t^2 + 96t - 194$

$b^2 - 4ac = -3200$ NO Real Sol.

The object will NOT reach a height of 200. The quadratic formula results in an imaginary solution for this height

b) Find the time it takes to reach a height of 150 feet.

$h(t) = 150$

$150 = -16t^2 + 96t + 6$

$-150 \quad\quad -150$

$0 = -16t^2 + 96t - 144$

$b^2 - 4ac = 0$ 1 real Sol

$t = \frac{-96 \pm 0}{-32} = \frac{-96}{-32} = 3$

The object will reach a height of 150 ft one time at $t = 3$ sec

c) Find the time it takes to reach a height of 50 feet.

$h(t) = 50$

$50 = -16t^2 + 96t + 6$

$-50 \quad\quad -50$

$0 = -16t^2 + 96t - 44$

$b^2 - 4ac = 6400$ 2 real sol's

$t = \frac{-96 \pm \sqrt{6400}}{-32}$

$t = 0.5$ & 5.5

The object will reach a height of 50 ft twice, when $t = 0.5$ sec & when $t = 5.5$ sec

2. Simplify this product. $(7 + 2i)(5 - 3i)$

	7	$+2i$
5	35	$+10i$
$-3i$	$-21i$	$-6i^2 = +6$

$=$ [illegible] $41 - 11i$