Name_____ ID: 1

Date_____ Period____

Unit 3 Quiz Review

1) The ages of three brothers are consecutive even integers. Three times the age of the youngest brother is 48 more than the oldest brother. What is the youngest brother's age?

A) 26   B) 22
C) 14   D) 18

2) The product of two positive consecutive integers is 72. Identify the equation that could be used to find the two integers.

A) $x^2 - x - 72 = 0$
B) $x^2 - x + 72 = 0$
C) $x^2 + x + 72 = 0$
D) $x^2 + x - 72 = 0$

3) The product of two positive consecutive odd integers is 143. Find the integers.

4) Find two consecutive odd integers whose product is 99.

5) The length of a rectangular plot of land is 10 yards more than its width. If the area is 600 yd^2, find the dimensions of the plot of land.

6) The length of a rectangular window is 5 feet more than its width. The area is 36 ft^2. Which equation can be used to find the dimensions?

A) $w^2 - 5w - 36 = 0$
B) $w^2 - 5w + 36 = 0$
C) $w^2 + 5w + 36 = 0$
D) $w^2 + 5w - 36 = 0$

7) Ramon is standing on a balcony 84 feet above the ground, and throws a penny straight down with an initial velocity, v, of 10 feet per second. The penny's distance can be modeled by the equation:
$84 = 10t + 16t^2$.

How many seconds will it take for it to reach the ground?

A) 6   B) 8   C) 2   D) 3

8) A ball is thrown straight up from the top of a 64 foot building with an initial speed of 48 feet per second. The height of a the ball as a function of time can be modeled by the function $h(t) = -16t^2 + 48t + 64$. How long will it take the ball to hit the ground?

A) 1 second   B) 1.5 seconds

C) 16 seconds   D) 4 seconds

9) A ball is thrown straight up from the top of a 112 foot building with an initial speed of 96 feet per second. The height of a the ball as a function of time can be modeled by the function $h(t) = -16t^2 + 96t + 112$. How long will it take the ball to hit the ground?

A) 256 seconds   B) 1 second

C) 3 seconds   D) 7 seconds

10) A ball is thrown straight up from the top of a 24 foot building with an initial speed of 40 feet per second. The height of a the ball as a function of time can be modeled by the function $h(t) = -16t^2 + 40t + 24$. How long does it take the ball to hit the ground?

A) 49 seconds   B) 1.25 seconds

C) 3 seconds   D) 0.5 seconds

11) A ball is thrown straight up from the top of a 192 foot building with an initial speed of 64 feet per second. The height of a the ball as a function of time can be modeled by the function $h(t) = -16t^2 + 64t + 192$. When does the ball hit the ground?

A) 256 seconds   B) 16 seconds

C) 2 seconds   D) 6 seconds

12) A ball is thrown straight up from the top of a 30 foot building with an initial speed of 74 feet per second. The height of a the ball as a function of time can be modeled by the function $h(t) = -16t^2 + 74t + 30$. How long will it take for the ball to hit the ground?

A) 0.375 seconds   B) 5 seconds

C) 2.3 seconds   D) 115.56 seconds

13) A rock is thrown vertically downwards from a height of 9.2 m above the ground, with a velocity of 6.65 m per s. The height in meters, of the rock above the ground, is given by the function $h(t) = -4.9t^2 - 6.65t + 9.2$. The time taken, in seconds, for the rock to hit the ground is:

A) 0.85   B) 1.7

C) 1.38   D) 2.2

14) The height of a cannon ball, in feet, shot from a pirate ship is given by the equation $h = -0.03x^2 + 2.84x + 20$ where x is given in seconds. After how many seconds does the cannon ball splash into the water?

A) 47.33 seconds   B) 101.25 seconds

C) 6.58 seconds   D) 87.21 seconds

15) A ball is thrown into the air with an upward velocity of 48 ft per s. Its height h in feet after t seconds is given by the function:

$$h(t) = -16t^2 + 48t + 8.$$

What is the maximum height?

A) 116 feet   B) 56 feet

C) 28 feet   D) 44 feet

16) A ball is thrown straight up from the top of a 24 foot building with an initial speed of 40 feet per second. The height of a the ball as a function of time can be modeled by the function $h(t) = -16t^2 + 40t + 24$. What is the ball's maximum height?

A) 3 feet
B) 49 feet
C) 1.25 feet
D) 16 feet

17) While playing basketball this weekend, Frank shoots an air-ball. The height h in feet of the ball is given by $h = -16t^2 + 32t + 8$.

What is the height after 4 seconds?

18) While on a field trip, Jeni sees a hawk drop its prey. The height h in feet of the prey is given by $h = -16t^2 + 48t + 50$.

What is the height after 3 seconds?

19) A ball is thrown straight up from the top of a 30 foot building with an initial speed of 74 feet per second. The height of a the ball as a function of time can be modeled by the function $h(t) = -16t^2 + 74t + 30$.

What is the height after 1 second?

20) A ball is thrown into the air with an upward velocity of 48 *ft* per *s*. Its height h in feet after t seconds is given by the function:

$$h(t) = -16t^2 + 48t + 8.$$

In how many seconds does the ball reach its maximum height?

A) −1.5 seconds
B) 16 seconds
C) 3 seconds
D) 1.5 seconds

21) A ball is thrown straight up from the top of a 224 foot building with an initial speed of 80 feet per second. The height of a the ball as a function of time can be modeled by the function $h(t) = -16t^2 + 80t + 224$. When does the ball reach its maximum height?

A) 2.5 seconds
B) 7 seconds
C) 324 seconds
D) 2 seconds