

Weekly Review #22

Name: _____ Class: _____

Due Date #1: **Tues. 4/7** Due Date #2: **Fri. 4/10** (Regardless of whether you have class.)

- 1.) If $f(1) = 3$ and $f(n) = -2f(n-1) + 1$, then $f(5) =$
- (A) -5 (C) 21
(B) 11 (D) 43
- 2.) Which statement is **not** always true?
- (A) The product of two irrational numbers is irrational.
(B) The product of two rational numbers is rational.
(C) The sum of two irrational numbers is irrational.
(D) The sum of a rational number and an irrational number is irrational.
- 3.) Which equation has the same solution as $x^2 - 8x - 16 = 0$?
- (A) $(x + 4)^2 = 32$ (C) $(x + 4)^2 = 16$
(B) $(x - 4)^2 = 32$ (D) $(x - 4)^2 = 16$
- 4.) A model rocket is launched vertically from a platform 64 feet above the ground. The height the rocket reaches during the flight is modeled by the equation $s(t) = -16t^2 + 48t + 64$, where s is the height of the rocket and t is the time in seconds since the launch. After how many seconds will the rocket hit the ground?
- (A) 1 (C) 3
(B) 2 (D) 4
- 5.) The function $g(x) = \begin{cases} x + 3; & x \geq 3 \\ 6; & 1 < x < 3. \\ x^2; & x \leq 1 \end{cases}$. Find $g(-2)$.
- (A) 1 (C) -4
(B) 6 (D) 4

- 6.) What is the average rate of change between $f(1)$ and $f(5)$ in the function $f(x) = x^2 - x - 6$?
- (A) -6 (C) 5
(B) -5 (D) 14
- 7.) The growth of mold over time is represented by the function $m(t) = 55(1.2)^t$, where $m(t)$ represents the number of square centimeters of mold and t represents the time in days. In the function $m(t)$, explain what the 1.2 and the 55 represent.
- 8.) Solve the quadratic equation.
 $2x^2 + 5x - 7 = 0$

A high school drama club is putting on their annual theater production. There is a maximum of 800 tickets for the show. The costs of the tickets are \$6 before the day of the show and \$9 on the day of the show. To meet the expenses of the show, the club must sell at least \$5,000 worth of tickets.

- 9.) Write a system of inequalities that represent this situation.
- 10.) The club sells 440 tickets before the day of the show. Is it possible to sell enough additional tickets on the day of the show to at least meet the expenses of the show? Justify your answer.