

Name _____

Secondary 3 Honors SAGE Review Teacher _____ Date _____ Period _____

A.REI.2

Multiple Choice Identify the choice that best completes the statement or answers the question.

____ 1. Solve the equation $\sqrt{c} = 7$.

- a. $c = 49$
- b. $c = 14$

- c. $c = -49$
- d. $c = -14$

____ 2. Solve the equation $\sqrt{y} + 9 = 12$.

- a. $y = 3$
- b. $y = -9$

- c. $y = 21$
- d. $y = 9$

____ 3. Solve the equation $5\sqrt{x} = 35$.

- a. $x = 49$
- b. $x = 7$

- c. $x = 900$
- d. $x = \frac{7}{5}$

____ 4. Solve the equation $-7 + \sqrt{x+3} = -1$.

- a. $x = 36$
- b. $x = -2$

- c. $x = 33$
- d. $x = 39$

____ 5. Solve the equation $\sqrt{40x} = 5\sqrt{x+3}$.

- a. $x = 7$
- b. $x = 75$

- c. $x = 10$
- d. $x = 5$

____ 6. Solve the equation $\sqrt{x+3} = -6$.

- a. 33
- b. 33, -39

- c. no real number solutions
- d. -39

____ 7. Solve the equation $\sqrt{7x-2} = 16$.

- a. $\frac{246}{7}$
- b. $\frac{6}{7}$

- c. $\frac{258}{7}, \frac{288}{7}$
- d. $\frac{258}{7}$

____ 8. Solve the equation $\sqrt{x+72} = x$.

- a. 9
- b. no solution
- c. 9, -8
- d. -8

9. Solve: $\frac{x-6}{x-3} = \frac{x+8}{x-2}$
- a. $\frac{36}{13}$ b. $\frac{12}{13}$ c. 12 d. 4
10. Solve the equation.
- $$\frac{x}{x^2-1} + \frac{1}{x-1} = \frac{1}{x+1}$$
- a. 2 b. -2 c. 1 d. no solution
11. Solve the equation $\sqrt{3m-8} - \sqrt{m+6} = 0$.
- a. $m = \frac{1}{2}$ c. $m = \frac{7}{2}$
b. $m = 7$ d. No solution.
12. Solve the equation $\sqrt{5-4a} = a$.
- a. $a = 1$ c. $a = -5$
b. No solution. d. $a = \frac{1}{5}$
13. Solve $\frac{4}{m-4} = \frac{2}{5m}$.
- a. $m = \frac{4}{9}$ c. $m = -\frac{4}{11}$
b. $m = -\frac{4}{9}$ d. $m = \frac{4}{11}$
14. Solve $-\frac{2}{z} + \frac{1}{2z} = \frac{3}{z-6}$.
- a. $z = 2$ c. $z = -6$
b. $z = -2$ d. $z = \frac{3}{2}$
15. Solve $\frac{x}{x+6} = \frac{x-4}{-x-6}$.
- a. $x = -6$ c. $x = -6$ or $x = 2$
b. $x = -7$ or $x = -2$ d. $x = 2$
16. Solve $\frac{x^2-2x-15}{x+3} = -8$.
- a. $x = 5$
b. There is no solution because the original equation is undefined at $x = -3$.
c. $x = -11$
d. $x = -3$
17. Solve the equation $(2x+15)^{\frac{1}{2}} = x$.
- a. $x = -5$ or $x = 3$ c. $x = 5$ or $x = -3$
b. $x = -3$ d. $x = 5$

_____ 18. Solve the equation.

$$\sqrt{x+10} = x-2$$

a. $x = 6$

b. $x = 7$

c. $x = -1$

d. $x = 5$

_____ 19. Solve: $x-9 = -\frac{18}{x}$

a. $x = 3$ or $x = 6$

b. $x = 6$

c. $x = -3$ or $x = -6$

d. $x = 3$

_____ 20. Solve: $\frac{3x}{x-3} = \frac{x+6}{x-3}$

a. There is no solution.

b. $x = -6$

c. $x = 3$

d. $x = -3$

_____ 21. Solve: $\frac{2x}{x^2-7x-18} = \frac{6x}{x^2+x-2}$

a. $x = -2$, $x = 9$, or $x = 1$

b. $x = 0$ or $x = 13$

c. $x = 0$ or $x = -13$

d. $x = 9$ or $x = 1$

_____ 22. For which of the following equations does solving algebraically lead to at least one extraneous solution?

a. $\sqrt[3]{5x^2+6x} = x$

b. $\frac{x+3}{x+5} = \frac{4}{x}$

c. $\sqrt{x+8} - 8 = x$

d. $\frac{x}{x-3} + \frac{2}{x+5} = -\frac{16}{x^2+2x-15}$

Numeric Response

23. What value of x makes $(5x-3)^{\frac{1}{3}} = 3$ a true statement?

Short Answer

24. Solve the equation, if possible.

$$\sqrt{2x+7} = 5$$

25. Solve: $\frac{x-1}{x+2} = \frac{3}{x}$