

Name \_\_\_\_\_

**SHOW ALL YOUR WORK ON SEPARATE PAPER.****NO WORK = NO GRADE****Solve each equation by factoring.**

1)  $(3x + 1)(x + 4) = 0$

2)  $(r - 1)(r + 1) = 0$

3)  $v^2 - 8v + 7 = 0$

4)  $3x^2 + 12x + 9 = 0$

5)  $x^2 + 7x = 8$

6)  $n^2 = -9 - 6n$

**Solve each equation with the quadratic formula.**

7)  $n^2 - 2n - 3 = 0$

8)  $x^2 - 3x - 18 = 0$

9)  $4r^2 = 24 - 10r$

10)  $4m^2 = 2 - 4m$

11)  $-2n^2 + 2n + 53 = -7$

12)  $-10x^2 - 12x + 45 = -9x^2 + 1 - 5x$

**Solve each system by substitution.**

13) 
$$\begin{aligned}x + 5y &= 20 \\ -3x - 5y &= -20\end{aligned}$$

14) 
$$\begin{aligned}7x + y &= 7 \\ -7x - 8y &= -7\end{aligned}$$

**Solve each system by elimination.**

15) 
$$\begin{aligned}5x + y &= -13 \\ x + 2y &= 1\end{aligned}$$

16) 
$$\begin{aligned}6x - 9y &= -30 \\ -x + 18y &= 5\end{aligned}$$

**Simplify.**

17)  $\sqrt{16x^4} =$

18)  $\sqrt[3]{8x^3} =$

19)  $\sqrt[4]{16x^4} =$

20)  $\sqrt{48} =$