

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)  $x + 5y = 20$

$-3x - 5y = -20$

14)  $7x + y = 7$

$-7x - 8y = -7$

**Solve each system by elimination.**

15)  $5x + y = -13$

$x + 2y = 1$

16)  $6x - 9y = -30$

$-x + 18y = 5$

**Simplify.**

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

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

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

20)  $\sqrt{48} =$