# Math-1010 HW #2-7 (Radical Equations, Unit 2 Review)

**Solve each equation. Remember to check for extraneous solutions.**

1) $5 + \sqrt{2k - 9} = 8$

2) $-7 + \sqrt{r + 4} = 2$

3) $-1 + \sqrt{1 - p} = 2$

4) $12 = 9 + \sqrt{x - 9}$

5) $\sqrt{-7 - n} = \sqrt{-15 - 2n}$

6) $-5 + \sqrt{4 - 3x} = 0$

**Simplify.**

7) $-3\sqrt{192a^4b^4}$

8) $4\sqrt[4]{112x^8y^7}$

9) $\sqrt{6}\left(-5\sqrt{3} + \sqrt{10}\right)$

10) $\sqrt{6}\left(3 + 2\sqrt{6}\right)$

11) $\dfrac{2\sqrt{6}}{\sqrt{32}}$

12) $\dfrac{\sqrt{15}}{\sqrt{48}}$

13) $-3\sqrt{5} - 3\sqrt{6} - 3\sqrt{54}$

14) $2\sqrt{3} - \sqrt{3} + 3\sqrt{12}$

**Write each expression in exponential form.**

15) $\left(\sqrt[3]{4x}\right)^5$

16) $\left(\sqrt[3]{4n}\right)^4$

**Write each expression in radical form.**

17) $(3b)^{\frac{5}{2}}$

18) $n^{\frac{4}{3}}$

**Find each product.**

19) $(6x + 7)(7x^2 + 2x + 1)$

20) $(2x + 5)(x^2 - 8x - 2)$

**Divide.**

21) $(x^3 - 13x^2 + 30x + 47) \div (x - 9)$

22) $(5n^3 + 43n^2 - 9n + 75) \div (n + 9)$

23) $(-10b^3 - 71b^2 + 68b - 32) \div (b + 8)$

24) $(x^3 - 15x^2 + 46x + 80) \div (x - 8)$

**Solve each system by either substitution or eliimination.**

25) $5x - 2y = 6$
$x + y = 4$

26) $3x + y = -3$
$x - 2y = -8$

**Solve each system by elimination.**

27) $-2r + 5s - 2t = -9$
$-5r - 5s - 5t = -5$
$-2r - s - 5t = -21$

28) $5r + 6s - 2t = 18$
$-6r - 6s + 5t = -17$
$r + 2s + 5t = 3$