Kuta Software - Infinite Algebra 1

Name_____

Adding and Subtracting Radical Expressions

Date_____ Period____

Simplify.

1) $3\sqrt{6} - 4\sqrt{6}$

2) $-3\sqrt{7} + 4\sqrt{7}$

3) $-11\sqrt{21} - 11\sqrt{21}$

4) $-9\sqrt{15} + 10\sqrt{15}$

5) $-10\sqrt{7} + 12\sqrt{7}$

6) $-3\sqrt{17} - 4\sqrt{17}$

7) $-10\sqrt{11} - 11\sqrt{11}$

8) $-2\sqrt{3} + 3\sqrt{27}$

9) $2\sqrt{6} - 2\sqrt{24}$

10) $2\sqrt{6} + 3\sqrt{54}$

11) $-\sqrt{12} + 3\sqrt{3}$

12) $3\sqrt{3} - \sqrt{27}$

13) $3\sqrt{8} + 3\sqrt{2}$

14) $-3\sqrt{6} + 3\sqrt{6}$

15) $-3\sqrt{20} - \sqrt{5}$

16) $2\sqrt{45} - 2\sqrt{5}$

17) $3\sqrt{18} - 2\sqrt{2}$

18) $-3\sqrt{18} + 3\sqrt{8} - \sqrt{24}$

19) $3\sqrt{18} + 3\sqrt{12} + 2\sqrt{27}$

20) $-3\sqrt{5} - \sqrt{6} - \sqrt{5}$

21) $-3\sqrt{2} + 3\sqrt{20} - 3\sqrt{8}$

22) $-3\sqrt{3} - \sqrt{8} - 3\sqrt{3}$

23) $-2\sqrt{20} + 2\sqrt{18} - 2\sqrt{5}$

24) $2\sqrt{18} - 2\sqrt{12} + 2\sqrt{18}$

25) $-\sqrt{45} + 2\sqrt{5} - \sqrt{20} - 2\sqrt{6}$

26) $2\sqrt{20} - \sqrt{20} + 3\sqrt{20} - 2\sqrt{45}$

27) $-3\sqrt{45} + 2\sqrt{12} + 3\sqrt{6} - 3\sqrt{20}$

28) $-\sqrt{27} - 3\sqrt{45} - \sqrt{20} + 2\sqrt{45}$

Kuta Software - Infinite Algebra 1   Name_____

Adding and Subtracting Radical Expressions   Date_____ Period____

Simplify.

1) $3\sqrt{6} - 4\sqrt{6}$

$-\sqrt{6}$

2) $-3\sqrt{7} + 4\sqrt{7}$

$\sqrt{7}$

3) $-11\sqrt{21} - 11\sqrt{21}$

$-22\sqrt{21}$

4) $-9\sqrt{15} + 10\sqrt{15}$

$\sqrt{15}$

5) $-10\sqrt{7} + 12\sqrt{7}$

$2\sqrt{7}$

6) $-3\sqrt{17} - 4\sqrt{17}$

$-7\sqrt{17}$

7) $-10\sqrt{11} - 11\sqrt{11}$

$-21\sqrt{11}$

8) $-2\sqrt{3} + 3\sqrt{27}$

$7\sqrt{3}$

9) $2\sqrt{6} - 2\sqrt{24}$

$-2\sqrt{6}$

10) $2\sqrt{6} + 3\sqrt{54}$

$11\sqrt{6}$

11) $-\sqrt{12} + 3\sqrt{3}$

$\sqrt{3}$

12) $3\sqrt{3} - \sqrt{27}$

0

13) $3\sqrt{8} + 3\sqrt{2}$

$\quad 9\sqrt{2}$

14) $-3\sqrt{6} + 3\sqrt{6}$

$\quad 0$

15) $-3\sqrt{20} - \sqrt{5}$

$\quad -7\sqrt{5}$

16) $2\sqrt{45} - 2\sqrt{5}$

$\quad 4\sqrt{5}$

17) $3\sqrt{18} - 2\sqrt{2}$

$\quad 7\sqrt{2}$

18) $-3\sqrt{18} + 3\sqrt{8} - \sqrt{24}$

$\quad -3\sqrt{2} - 2\sqrt{6}$

19) $3\sqrt{18} + 3\sqrt{12} + 2\sqrt{27}$

$\quad 9\sqrt{2} + 12\sqrt{3}$

20) $-3\sqrt{5} - \sqrt{6} - \sqrt{5}$

$\quad -4\sqrt{5} - \sqrt{6}$

21) $-3\sqrt{2} + 3\sqrt{20} - 3\sqrt{8}$

$\quad -9\sqrt{2} + 6\sqrt{5}$

22) $-3\sqrt{3} - \sqrt{8} - 3\sqrt{3}$

$\quad -6\sqrt{3} - 2\sqrt{2}$

23) $-2\sqrt{20} + 2\sqrt{18} - 2\sqrt{5}$

$\quad -6\sqrt{5} + 6\sqrt{2}$

24) $2\sqrt{18} - 2\sqrt{12} + 2\sqrt{18}$

$\quad 12\sqrt{2} - 4\sqrt{3}$

25) $-\sqrt{45} + 2\sqrt{5} - \sqrt{20} - 2\sqrt{6}$

$\quad -3\sqrt{5} - 2\sqrt{6}$

26) $2\sqrt{20} - \sqrt{20} + 3\sqrt{20} - 2\sqrt{45}$

$\quad 2\sqrt{5}$

27) $-3\sqrt{45} + 2\sqrt{12} + 3\sqrt{6} - 3\sqrt{20}$

$\quad -15\sqrt{5} + 4\sqrt{3} + 3\sqrt{6}$

28) $-\sqrt{27} - 3\sqrt{45} - \sqrt{20} + 2\sqrt{45}$

$\quad -3\sqrt{3} - 5\sqrt{5}$

Name_____

Adding + Subtracting Rational Expressions

Date_____ Period____

Simplify each expression.

1) $\dfrac{u+5v}{8v^2u^2} - \dfrac{u-6v}{8v^2u^2}$

2) $\dfrac{5n}{30m} + \dfrac{2m+4n}{30m}$

3) $\dfrac{a+2b}{6a^3} - \dfrac{5a+4b}{6a^3}$

4) $\dfrac{x+y}{18xy} - \dfrac{6x+y}{18xy}$

5) $\dfrac{4a-5}{6a^2+30a} + \dfrac{a-1}{6a^2+30a}$

6) $\dfrac{5x-4}{9x^3+27x^2} - \dfrac{x+6}{9x^3+27x^2}$

7) $\dfrac{b-3}{12b+18} + \dfrac{4b}{12b+18}$

8) $\dfrac{n-4}{n^2-n-20} + \dfrac{n+1}{n^2-n-20}$

9) $\dfrac{7x}{2x} - \dfrac{x-2}{20x+16}$

10) $\dfrac{8}{7v-6} + \dfrac{4}{3v^2}$

11) $\dfrac{7v}{8} - \dfrac{8v-4}{5v-2}$

12) $\dfrac{4}{n+7} - \dfrac{7}{n-2}$

13) $\dfrac{7}{3n^2+24n} - \dfrac{7}{2n}$

14) $\dfrac{6}{v-2} - \dfrac{7}{2v+7}$

15) $\dfrac{6x}{3} + \dfrac{7}{15x+3}$

16) $\dfrac{5v}{v-3} + \dfrac{5}{v+6}$

17) $\dfrac{4x}{x^2+4x-5} - \dfrac{5}{4}$

18) $\dfrac{2}{x+3} - \dfrac{6x}{2x+1}$

19) $\dfrac{4x}{x+3} - \dfrac{4x}{x+6}$

20) $\dfrac{2x}{3x+3} - \dfrac{2}{x+5}$

21) $\dfrac{6}{x-2} + \dfrac{6}{x+1}$

22) $\dfrac{v-2}{3v^4-15v^3-18v^2} + 3v$

Name_____

Adding + Subtracting Rational Expressions

Date_____ Period____

Simplify each expression.

1) $\dfrac{u+5v}{8v^2u^2} - \dfrac{u-6v}{8v^2u^2}$

$\dfrac{11}{8vu^2}$

2) $\dfrac{5n}{30m} + \dfrac{2m+4n}{30m}$

$\dfrac{9n+2m}{30m}$

3) $\dfrac{a+2b}{6a^3} - \dfrac{5a+4b}{6a^3}$

$\dfrac{-2a-b}{3a^3}$

4) $\dfrac{x+y}{18xy} - \dfrac{6x+y}{18xy}$

$-\dfrac{5}{18y}$

5) $\dfrac{4a-5}{6a^2+30a} + \dfrac{a-1}{6a^2+30a}$

$\dfrac{5a-6}{6a^2+30a}$

6) $\dfrac{5x-4}{9x^3+27x^2} - \dfrac{x+6}{9x^3+27x^2}$

$\dfrac{4x-10}{9x^3+27x^2}$

7) $\dfrac{b-3}{12b+18} + \dfrac{4b}{12b+18}$

$\dfrac{5b-3}{12b+18}$

8) $\dfrac{n-4}{n^2-n-20} + \dfrac{n+1}{n^2-n-20}$

$\dfrac{2n-3}{n^2-n-20}$

9) $\dfrac{7x}{2x} - \dfrac{x-2}{20x+16}$

$\dfrac{69x+58}{4(5x+4)}$

10) $\dfrac{8}{7v-6} + \dfrac{4}{3v^2}$

$\dfrac{24v^2+28v-24}{3v^2(7v-6)}$

11) $\dfrac{7v}{8} - \dfrac{8v-4}{5v-2}$

$\dfrac{35v^2 - 78v + 32}{8(5v-2)}$

12) $\dfrac{4}{n+7} - \dfrac{7}{n-2}$

$\dfrac{-3n-57}{(n+7)(n-2)}$

13) $\dfrac{7}{3n^2 + 24n} - \dfrac{7}{2n}$

$\dfrac{-154 - 21n}{6n(n+8)}$

14) $\dfrac{6}{v-2} - \dfrac{7}{2v+7}$

$\dfrac{5v+56}{(2v+7)(v-2)}$

15) $\dfrac{6x}{3} + \dfrac{7}{15x+3}$

$\dfrac{30x^2 + 6x + 7}{3(5x+1)}$

16) $\dfrac{5v}{v-3} + \dfrac{5}{v+6}$

$\dfrac{5v^2 + 35v - 15}{(v+6)(v-3)}$

17) $\dfrac{4x}{x^2 + 4x - 5} - \dfrac{5}{4}$

$\dfrac{-4x - 5x^2 + 25}{4(x+5)(x-1)}$

18) $\dfrac{2}{x+3} - \dfrac{6x}{2x+1}$

$\dfrac{-14x + 2 - 6x^2}{(2x+1)(x+3)}$

19) $\dfrac{4x}{x+3} - \dfrac{4x}{x+6}$

$\dfrac{12x}{(x+3)(x+6)}$

20) $\dfrac{2x}{3x+3} - \dfrac{2}{x+5}$

$\dfrac{2x^2 + 4x - 6}{3(x+1)(x+5)}$

21) $\dfrac{6}{x-2} + \dfrac{6}{x+1}$

$\dfrac{12x - 6}{(x+1)(x-2)}$

22) $\dfrac{v-2}{3v^4 - 15v^3 - 18v^2} + 3v$

$\dfrac{9v^5 - 45v^4 - 54v^3 + v - 2}{3v^2(v+1)(v-6)}$

Name_____

Dividing Radical Expressions

Date_____ Period____

Simplify.

1) $\dfrac{\sqrt{15}}{5\sqrt{20}}$

2) $\dfrac{\sqrt{8}}{\sqrt{100}}$

3) $\dfrac{\sqrt{6}}{\sqrt{27}}$

4) $\dfrac{3\sqrt{20}}{2\sqrt{4}}$

5) $\dfrac{4}{\sqrt{5}}$

6) $\dfrac{\sqrt{4}}{5\sqrt{3}}$

7) $\dfrac{\sqrt{5}}{\sqrt{3}}$

8) $\dfrac{\sqrt{2}}{2\sqrt{3}}$

9) $\dfrac{\sqrt{3x^2y^3}}{4\sqrt{5xy^3}}$

10) $\dfrac{\sqrt{15xy}}{3\sqrt{10xy^3}}$

11) $\dfrac{3-3\sqrt{3a}}{4\sqrt{8a}}$

12) $\dfrac{3n^2+\sqrt{2n^2}}{\sqrt{10n}}$

13) $\dfrac{4x^3 - 3\sqrt{3x}}{3\sqrt{3x^2}}$

14) $\dfrac{\sqrt{5k^4} + 3\sqrt{2k}}{\sqrt{3k^3}}$

15) $\dfrac{3}{4 + 4\sqrt{5}}$

16) $\dfrac{5}{-5 - 3\sqrt{3}}$

17) $\dfrac{5}{-3 - 3\sqrt{3}}$

18) $\dfrac{4}{\sqrt{2} - 5\sqrt{3}}$

19) $\dfrac{2 + 5\sqrt{3}}{-4 + 4\sqrt{2}}$

20) $\dfrac{\sqrt{5} + 2\sqrt{2}}{4 - \sqrt{5}}$

21) $\dfrac{\sqrt{5} + 3}{4 - \sqrt{5}}$

22) $\dfrac{3 - 4\sqrt{3}}{4\sqrt{5} + 3\sqrt{2}}$

Name_____

Dividing Radical Expressions

Date_____ Period____

Simplify.

1) $\dfrac{\sqrt{15}}{5\sqrt{20}}$

$\dfrac{\sqrt{3}}{10}$

2) $\dfrac{\sqrt{8}}{\sqrt{100}}$

$\dfrac{\sqrt{2}}{5}$

3) $\dfrac{\sqrt{6}}{\sqrt{27}}$

$\dfrac{\sqrt{2}}{3}$

4) $\dfrac{3\sqrt{20}}{2\sqrt{4}}$

$\dfrac{3\sqrt{5}}{2}$

5) $\dfrac{4}{\sqrt{5}}$

$\dfrac{4\sqrt{5}}{5}$

6) $\dfrac{\sqrt{4}}{5\sqrt{3}}$

$\dfrac{2\sqrt{3}}{15}$

7) $\dfrac{\sqrt{5}}{\sqrt{3}}$

$\dfrac{\sqrt{15}}{3}$

8) $\dfrac{\sqrt{2}}{2\sqrt{3}}$

$\dfrac{\sqrt{6}}{6}$

9) $\dfrac{\sqrt{3x^2y^3}}{4\sqrt{5xy^3}}$

$\dfrac{\sqrt{15x}}{20}$

10) $\dfrac{\sqrt{15xy}}{3\sqrt{10xy^3}}$

$\dfrac{\sqrt{6}}{6y}$

11) $\dfrac{3 - 3\sqrt{3a}}{4\sqrt{8a}}$

$\dfrac{3\sqrt{2a} - 3a\sqrt{6}}{16a}$

12) $\dfrac{3n^2 + \sqrt{2n^2}}{\sqrt{10n}}$

$\dfrac{3n\sqrt{10n} + 2\sqrt{5n}}{10}$

13) $\dfrac{4x^3 - 3\sqrt{3x}}{3\sqrt{3x^2}}$

$\dfrac{4x^3\sqrt{3} - 9\sqrt{x}}{9x}$

14) $\dfrac{\sqrt{5k^4} + 3\sqrt{2k}}{\sqrt{3k^3}}$

$\dfrac{k\sqrt{15k} + 3\sqrt{6}}{3k}$

15) $\dfrac{3}{4 + 4\sqrt{5}}$

$\dfrac{-3 + 3\sqrt{5}}{16}$

16) $\dfrac{5}{-5 - 3\sqrt{3}}$

$\dfrac{25 - 15\sqrt{3}}{2}$

17) $\dfrac{5}{-3 - 3\sqrt{3}}$

$\dfrac{5 - 5\sqrt{3}}{6}$

18) $\dfrac{4}{\sqrt{2} - 5\sqrt{3}}$

$\dfrac{-4\sqrt{2} - 20\sqrt{3}}{73}$

19) $\dfrac{2 + 5\sqrt{3}}{-4 + 4\sqrt{2}}$

$\dfrac{2 + 2\sqrt{2} + 5\sqrt{3} + 5\sqrt{6}}{4}$

20) $\dfrac{\sqrt{5} + 2\sqrt{2}}{4 - \sqrt{5}}$

$\dfrac{4\sqrt{5} + 5 + 8\sqrt{2} + 2\sqrt{10}}{11}$

21) $\dfrac{\sqrt{5} + 3}{4 - \sqrt{5}}$

$\dfrac{7\sqrt{5} + 17}{11}$

22) $\dfrac{3 - 4\sqrt{3}}{4\sqrt{5} + 3\sqrt{2}}$

$\dfrac{12\sqrt{5} - 9\sqrt{2} - 16\sqrt{15} + 12\sqrt{6}}{62}$

Create your own worksheets like this one with **Infinite Algebra 1**. Free trial available at KutaSoftware.com

Name_____

Factoring By Grouping

Date_____ Period____

Factor each completely.

1) $8r^3 - 64r^2 + r - 8$

2) $12p^3 - 21p^2 + 28p - 49$

3) $12x^3 + 2x^2 - 30x - 5$

4) $6v^3 - 16v^2 + 21v - 56$

5) $63n^3 + 54n^2 - 105n - 90$

6) $21k^3 - 84k^2 + 15k - 60$

7) $25v^3 + 5v^2 + 30v + 6$

8) $105n^3 + 175n^2 - 75n - 125$

9) $96n^3 - 84n^2 + 112n - 98$

10) $28v^3 + 16v^2 - 21v - 12$

11) $4v^3 - 12v^2 - 5v + 15$

12) $49x^3 - 35x^2 + 56x - 40$

13) $24p^3 + 15p^2 - 56p - 35$

14) $24r^3 - 64r^2 - 21r + 56$

15) $56xw + 49xk^2 - 24yw - 21yk^2$

16) $42mc + 36md - 7n^2c - 6n^2d$

17) $12x^2u + 3x^2v + 28yu + 7yv$

18) $40ac^2 + 25ak^2 + 32bc^2 + 20bk^2$

19) $12bc - 4bd - 15xc + 5xd$

20) $16mn - 4m^2 + 28n - 7m$

21) $56xy - 35x + 16ry - 10r$

22) $21xy + 15x + 35ry + 25r$

23) $5a^2z - 4a^2c + 15xz - 12xc$

24) $4xy + 6 - x - 24y$

25) $21xy - 12b^2 + 14xb - 18by$

26) $9mz - 4nc + 3mc - 12nz$

27) $28xy + 25 + 35x + 20y$

28) $30uv + 30u + 36u^2 + 25v$

Name_____

Factoring By Grouping

Date_____ Period____

Factor each completely.

1) $8r^3 - 64r^2 + r - 8$

$(8r^2 + 1)(r - 8)$

2) $12p^3 - 21p^2 + 28p - 49$

$(3p^2 + 7)(4p - 7)$

3) $12x^3 + 2x^2 - 30x - 5$

$(2x^2 - 5)(6x + 1)$

4) $6v^3 - 16v^2 + 21v - 56$

$(2v^2 + 7)(3v - 8)$

5) $63n^3 + 54n^2 - 105n - 90$

$3(3n^2 - 5)(7n + 6)$

6) $21k^3 - 84k^2 + 15k - 60$

$3(7k^2 + 5)(k - 4)$

7) $25v^3 + 5v^2 + 30v + 6$

$(5v^2 + 6)(5v + 1)$

8) $105n^3 + 175n^2 - 75n - 125$

$5(7n^2 - 5)(3n + 5)$

9) $96n^3 - 84n^2 + 112n - 98$

$2(6n^2 + 7)(8n - 7)$

10) $28v^3 + 16v^2 - 21v - 12$

$(4v^2 - 3)(7v + 4)$

11) $4v^3 - 12v^2 - 5v + 15$

$(4v^2 - 5)(v - 3)$

12) $49x^3 - 35x^2 + 56x - 40$

$(7x^2 + 8)(7x - 5)$

13) $24p^3 + 15p^2 - 56p - 35$

$(3p^2 - 7)(8p + 5)$

14) $24r^3 - 64r^2 - 21r + 56$

$(8r^2 - 7)(3r - 8)$

15) $56xw + 49xk^2 - 24yw - 21yk^2$

$(7x - 3y)(8w + 7k^2)$

16) $42mc + 36md - 7n^2c - 6n^2d$

$(6m - n^2)(7c + 6d)$

17) $12x^2u + 3x^2v + 28yu + 7yv$

$(3x^2 + 7y)(4u + v)$

18) $40ac^2 + 25ak^2 + 32bc^2 + 20bk^2$

$(5a + 4b)(8c^2 + 5k^2)$

19) $12bc - 4bd - 15xc + 5xd$

$(4b - 5x)(3c - d)$

20) $16mn - 4m^2 + 28n - 7m$

$(4m + 7)(4n - m)$

21) $56xy - 35x + 16ry - 10r$

$(7x + 2r)(8y - 5)$

22) $21xy + 15x + 35ry + 25r$

$(3x + 5r)(7y + 5)$

23) $5a^2z - 4a^2c + 15xz - 12xc$

$(a^2 + 3x)(5z - 4c)$

24) $4xy + 6 - x - 24y$

$(x - 6)(4y - 1)$

25) $21xy - 12b^2 + 14xb - 18by$

$(7x - 6b)(3y + 2b)$

26) $9mz - 4nc + 3mc - 12nz$

$(3m - 4n)(3z + c)$

27) $28xy + 25 + 35x + 20y$

$(7x + 5)(4y + 5)$

28) $30uv + 30u + 36u^2 + 25v$

$(6u + 5)(5v + 6u)$

Name_____

Factoring Trinomials (a = 1)

Date_____ Period____

Factor each completely.

1) $b^2 + 8b + 7$

2) $n^2 - 11n + 10$

3) $m^2 + m - 90$

4) $n^2 + 4n - 12$

5) $n^2 - 10n + 9$

6) $b^2 + 16b + 64$

7) $m^2 + 2m - 24$

8) $x^2 - 4x + 24$

9) $k^2 - 13k + 40$

10) $a^2 + 11a + 18$

11) $n^2 - n - 56$

12) $n^2 - 5n + 6$

13) $b^2 - 6b + 8$

14) $n^2 + 6n + 8$

15) $2n^2 + 6n - 108$

16) $5n^2 + 10n + 20$

17) $2k^2 + 22k + 60$

18) $a^2 - a - 90$

19) $p^2 + 11p + 10$

20) $5v^2 - 30v + 40$

21) $2p^2 + 2p - 4$

22) $4v^2 - 4v - 8$

23) $x^2 - 15x + 50$

24) $v^2 - 7v + 10$

25) $p^2 + 3p - 18$

26) $6v^2 + 66v + 60$

Name_____

Factoring Trinomials (a = 1)

Date_____ Period____

Factor each completely.

1) $b^2 + 8b + 7$

$(b + 7)(b + 1)$

2) $n^2 - 11n + 10$

$(n - 10)(n - 1)$

3) $m^2 + m - 90$

$(m - 9)(m + 10)$

4) $n^2 + 4n - 12$

$(n - 2)(n + 6)$

5) $n^2 - 10n + 9$

$(n - 1)(n - 9)$

6) $b^2 + 16b + 64$

$(b + 8)^2$

7) $m^2 + 2m - 24$

$(m + 6)(m - 4)$

8) $x^2 - 4x + 24$

Not factorable

9) $k^2 - 13k + 40$

$(k - 5)(k - 8)$

10) $a^2 + 11a + 18$

$(a + 2)(a + 9)$

11) $n^2 - n - 56$

$(n + 7)(n - 8)$

12) $n^2 - 5n + 6$

$(n - 2)(n - 3)$

13) $b^2 - 6b + 8$

$(b-4)(b-2)$

14) $n^2 + 6n + 8$

$(n+2)(n+4)$

15) $2n^2 + 6n - 108$

$2(n+9)(n-6)$

16) $5n^2 + 10n + 20$

$5(n^2 + 2n + 4)$

17) $2k^2 + 22k + 60$

$2(k+5)(k+6)$

18) $a^2 - a - 90$

$(a-10)(a+9)$

19) $p^2 + 11p + 10$

$(p+10)(p+1)$

20) $5v^2 - 30v + 40$

$5(v-2)(v-4)$

21) $2p^2 + 2p - 4$

$2(p-1)(p+2)$

22) $4v^2 - 4v - 8$

$4(v+1)(v-2)$

23) $x^2 - 15x + 50$

$(x-10)(x-5)$

24) $v^2 - 7v + 10$

$(v-5)(v-2)$

25) $p^2 + 3p - 18$

$(p-3)(p+6)$

26) $6v^2 + 66v + 60$

$6(v+10)(v+1)$

Create your own worksheets like this one with **Infinite Algebra 1**. Free trial available at KutaSoftware.com

Name_____

Multiplying Polynomials

Date_____ Period____

Find each product.

1) $6v(2v + 3)$

2) $7(-5v - 8)$

3) $2x(-2x - 3)$

4) $-4(v + 1)$

5) $(2n + 2)(6n + 1)$

6) $(4n + 1)(2n + 6)$

7) $(x - 3)(6x - 2)$

8) $(8p - 2)(6p + 2)$

9) $(6p + 8)(5p - 8)$

10) $(3m - 1)(8m + 7)$

11) $(2a - 1)(8a - 5)$

12) $(5n + 6)(5n - 5)$

13) $(4p - 1)^2$

14) $(7x - 6)(5x + 6)$

15) $(6n + 3)(6n - 4)$

16) $(8n + 1)(6n - 3)$

17) $(6k + 5)(5k + 5)$

18) $(3x - 4)(4x + 3)$

19) $(4a + 2)(6a^2 - a + 2)$

20) $(7k - 3)(k^2 - 2k + 7)$

21) $(7r^2 - 6r - 6)(2r - 4)$

22) $(n^2 + 6n - 4)(2n - 4)$

23) $(6n^2 - 6n - 5)(7n^2 + 6n - 5)$

24) $\left(m^2 - 7m - 6\right)\left(7m^2 - 3m - 7\right)$

Name_____

Multiplying Polynomials

Date_____ Period____

Find each product.

1) $6v(2v + 3)$

$12v^2 + 18v$

2) $7(-5v - 8)$

$-35v - 56$

3) $2x(-2x - 3)$

$-4x^2 - 6x$

4) $-4(v + 1)$

$-4v - 4$

5) $(2n + 2)(6n + 1)$

$12n^2 + 14n + 2$

6) $(4n + 1)(2n + 6)$

$8n^2 + 26n + 6$

7) $(x - 3)(6x - 2)$

$6x^2 - 20x + 6$

8) $(8p - 2)(6p + 2)$

$48p^2 + 4p - 4$

9) $(6p + 8)(5p - 8)$

$30p^2 - 8p - 64$

10) $(3m - 1)(8m + 7)$

$24m^2 + 13m - 7$

11) $(2a - 1)(8a - 5)$

$16a^2 - 18a + 5$

12) $(5n + 6)(5n - 5)$

$25n^2 + 5n - 30$

13) $(4p - 1)^2$

$16p^2 - 8p + 1$

14) $(7x - 6)(5x + 6)$

$35x^2 + 12x - 36$

15) $(6n + 3)(6n - 4)$

$36n^2 - 6n - 12$

16) $(8n + 1)(6n - 3)$

$48n^2 - 18n - 3$

17) $(6k + 5)(5k + 5)$

$30k^2 + 55k + 25$

18) $(3x - 4)(4x + 3)$
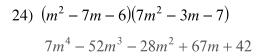
$12x^2 - 7x - 12$

19) $(4a + 2)(6a^2 - a + 2)$

$24a^3 + 8a^2 + 6a + 4$

20) $(7k - 3)(k^2 - 2k + 7)$

$7k^3 - 17k^2 + 55k - 21$

21) $(7r^2 - 6r - 6)(2r - 4)$

$14r^3 - 40r^2 + 12r + 24$

22) $(n^2 + 6n - 4)(2n - 4)$

$2n^3 + 8n^2 - 32n + 16$

23) $(6n^2 - 6n - 5)(7n^2 + 6n - 5)$

$42n^4 - 6n^3 - 101n^2 + 25$

24) $(m^2 - 7m - 6)(7m^2 - 3m - 7)$

$\qquad 7m^4 - 52m^3 - 28m^2 + 67m + 42$

Name_____

Multiplying Radical Expressions

Date_____ Period____

Simplify.

1) $3\sqrt{12} \cdot \sqrt{6}$

2) $\sqrt{5} \cdot \sqrt{10}$

3) $\sqrt{6} \cdot \sqrt{6}$

4) $\sqrt{5} \cdot -4\sqrt{20}$

5) $-4\sqrt{15} \cdot -\sqrt{3}$

6) $\sqrt{20x^2} \cdot \sqrt{20x}$

7) $\sqrt{15n^2} \cdot \sqrt{10n^3}$

8) $\sqrt{18a^2} \cdot 4\sqrt{3a^2}$

9) $-3\sqrt{7r^3} \cdot 6\sqrt{7r^2}$

10) $-4\sqrt{28x} \cdot \sqrt{7x^3}$

11) $\sqrt{3}(5 + \sqrt{3})$

12) $2\sqrt{5}(\sqrt{6} + 2)$

13) $-3\sqrt{3}(2 + \sqrt{6})$

14) $\sqrt{3}(-5\sqrt{10} + \sqrt{6})$

15) $-2\sqrt{15}\left(-3\sqrt{3} + 3\sqrt{5}\right)$

16) $5\sqrt{42x}\left(4 + 4\sqrt{7x}\right)$

17) $\sqrt{14x}\left(3 - \sqrt{2x}\right)$

18) $\sqrt{6n}\left(7n^3 + \sqrt{12}\right)$

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

20) $\sqrt{21r}\left(5 + \sqrt{7}\right)$

21) $\left(-2\sqrt{3} + 2\right)\left(\sqrt{3} - 5\right)$

22) $\left(5 - 4\sqrt{5}\right)\left(-2 + \sqrt{5}\right)$

23) $\left(-2 - 3\sqrt{5}\right)\left(5 - \sqrt{5}\right)$

24) $\left(\sqrt{5} - \sqrt{3}\right)\left(\sqrt{5} + \sqrt{3}\right)$

25) $\left(5\sqrt{2x} + \sqrt{5}\right)\left(-4\sqrt{2x} + \sqrt{5x}\right)$

26) $\left(-3\sqrt{3k} + 4\right)\left(\sqrt{3k} - 5\right)$

27) $\left(5 + 4\sqrt{3}\right)\left(3 + \sqrt{3}\right)$

28) $\left(3\sqrt{2} + \sqrt{5}\right)\left(\sqrt{2} - 3\sqrt{5r}\right)$

Name_____

Multiplying Radical Expressions

Date_____ Period____

Simplify.

1) $3\sqrt{12} \cdot \sqrt{6}$

$\quad 18\sqrt{2}$

2) $\sqrt{5} \cdot \sqrt{10}$

$\quad 5\sqrt{2}$

3) $\sqrt{6} \cdot \sqrt{6}$

$\quad 6$

4) $\sqrt{5} \cdot -4\sqrt{20}$

$\quad -40$

5) $-4\sqrt{15} \cdot -\sqrt{3}$

$\quad 12\sqrt{5}$

6) $\sqrt{20x^2} \cdot \sqrt{20x}$

$\quad 20x\sqrt{x}$

7) $\sqrt{15n^2} \cdot \sqrt{10n^3}$

$\quad 5n^2\sqrt{6n}$

8) $\sqrt{18a^2} \cdot 4\sqrt{3a^2}$

$\quad 12a^2\sqrt{6}$

9) $-3\sqrt{7r^3} \cdot 6\sqrt{7r^2}$

$\quad -126r^2\sqrt{r}$

10) $-4\sqrt{28x} \cdot \sqrt{7x^3}$

$\quad -56x^2$

11) $\sqrt{3}\left(5 + \sqrt{3}\right)$

$\quad 5\sqrt{3} + 3$

12) $2\sqrt{5}\left(\sqrt{6} + 2\right)$

$\quad 2\sqrt{30} + 4\sqrt{5}$

13) $-3\sqrt{3}\left(2 + \sqrt{6}\right)$

$\quad -6\sqrt{3} - 9\sqrt{2}$

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

$\quad -5\sqrt{30} + 3\sqrt{2}$

15) $-2\sqrt{15}\left(-3\sqrt{3}+3\sqrt{5}\right)$

$18\sqrt{5}-30\sqrt{3}$

16) $5\sqrt{42x}\left(4+4\sqrt{7x}\right)$

$20\sqrt{42x}+140x\sqrt{6}$

17) $\sqrt{14x}\left(3-\sqrt{2x}\right)$

$3\sqrt{14x}-2x\sqrt{7}$

18) $\sqrt{6n}\left(7n^3+\sqrt{12}\right)$

$7n^3\sqrt{6n}+6\sqrt{2n}$

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

$3\sqrt{2v}+\sqrt{30v}$

20) $\sqrt{21r}\left(5+\sqrt{7}\right)$

$5\sqrt{21r}+7\sqrt{3r}$

21) $\left(-2\sqrt{3}+2\right)\left(\sqrt{3}-5\right)$

$-16+12\sqrt{3}$

22) $\left(5-4\sqrt{5}\right)\left(-2+\sqrt{5}\right)$

$-30+13\sqrt{5}$

23) $\left(-2-3\sqrt{5}\right)\left(5-\sqrt{5}\right)$

$5-13\sqrt{5}$

24) $\left(\sqrt{5}-\sqrt{3}\right)\left(\sqrt{5}+\sqrt{3}\right)$

2

25) $\left(5\sqrt{2x}+\sqrt{5}\right)\left(-4\sqrt{2x}+\sqrt{5x}\right)$

$-40x+5x\sqrt{10}-4\sqrt{10x}+5\sqrt{x}$

26) $\left(-3\sqrt{3k}+4\right)\left(\sqrt{3k}-5\right)$

$-9k+19\sqrt{3k}-20$

27) $\left(5+4\sqrt{3}\right)\left(3+\sqrt{3}\right)$

$27+17\sqrt{3}$

28) $\left(3\sqrt{2}+\sqrt{5}\right)\left(\sqrt{2}-3\sqrt{5r}\right)$

$6-9\sqrt{10r}+\sqrt{10}-15\sqrt{r}$

Name_____

More Properties of Exponents

Date_____ Period____

Simplify. Your answer should contain only positive exponents.

1) $\left(x^{-2}x^{-3}\right)^4$

2) $\left(x^4\right)^{-3} \cdot 2x^4$

3) $\left(n^3\right)^3 \cdot 2n^{-1}$

4) $(2v)^2 \cdot 2v^2$

5) $\dfrac{2x^2y^4 \cdot 4x^2y^4 \cdot 3x}{3x^{-3}y^2}$

6) $\dfrac{2y^3 \cdot 3xy^3}{3x^2y^4}$

7) $\dfrac{x^3y^3 \cdot x^3}{4x^2}$

8) $\dfrac{3x^2y^2}{2x^{-1} \cdot 4yx^2}$

9) $\dfrac{x}{\left(2x^0\right)^2}$

10) $\dfrac{2m^{-4}}{\left(2m^{-4}\right)^3}$

11) $\dfrac{\left(2m^2\right)^{-1}}{m^2}$

12) $\dfrac{2x^3}{\left(x^{-1}\right)^3}$

13) $\left(a^{-3}b^{-3}\right)^0$

14) $x^4 y^3 \cdot \left(2y^2\right)^0$

15) $ba^4 \cdot \left(2ba^4\right)^{-3}$

16) $\left(2x^0 y^2\right)^{-3} \cdot 2yx^3$

17) $\dfrac{2k^3 \cdot k^2}{k^{-3}}$

18) $\dfrac{\left(x^{-3}\right)^4 x^4}{2x^{-3}}$

19) $\dfrac{\left(2x\right)^{-4}}{x^{-1} \cdot x}$

20) $\dfrac{\left(2x^3 z^2\right)^3}{x^3 y^4 z^2 \cdot x^{-4} z^3}$

21) $\dfrac{\left(2pm^{-1}q^0\right)^{-4} \cdot 2m^{-1}p^3}{2pq^2}$

22) $\dfrac{\left(2hj^2 k^{-2} \cdot h^4 j^{-1} k^4\right)^0}{2h^{-3} j^{-4} k^{-2}}$

Name_____

More Properties of Exponents

Date_____ Period____

Simplify. Your answer should contain only positive exponents.

1) $\left(x^{-2}x^{-3}\right)^4$

$$\frac{1}{x^{20}}$$

2) $\left(x^4\right)^{-3} \cdot 2x^4$

$$\frac{2}{x^8}$$

3) $\left(n^3\right)^3 \cdot 2n^{-1}$

$$2n^8$$

4) $(2v)^2 \cdot 2v^2$

$$8v^4$$

5) $\dfrac{2x^2 y^4 \cdot 4x^2 y^4 \cdot 3x}{3x^{-3}y^2}$

$$8x^8 y^6$$

6) $\dfrac{2y^3 \cdot 3xy^3}{3x^2 y^4}$

$$\frac{2y^2}{x}$$

7) $\dfrac{x^3 y^3 \cdot x^3}{4x^2}$

$$\frac{x^4 y^3}{4}$$

8) $\dfrac{3x^2 y^2}{2x^{-1} \cdot 4yx^2}$

$$\frac{3xy}{8}$$

9) $\dfrac{x}{\left(2x^0\right)^2}$

$$\frac{x}{4}$$

10) $\dfrac{2m^{-4}}{\left(2m^{-4}\right)^3}$

$$\frac{m^8}{4}$$

11) $\dfrac{\left(2m^2\right)^{-1}}{m^2}$

$\dfrac{1}{2m^4}$

12) $\dfrac{2x^3}{\left(x^{-1}\right)^3}$

$2x^6$

13) $\left(a^{-3}b^{-3}\right)^0$

1

14) $x^4y^3 \cdot \left(2y^2\right)^0$

x^4y^3

15) $ba^4 \cdot \left(2ba^4\right)^{-3}$

$\dfrac{1}{8b^2a^8}$

16) $\left(2x^0y^2\right)^{-3} \cdot 2yx^3$

$\dfrac{x^3}{4y^5}$

17) $\dfrac{2k^3 \cdot k^2}{k^{-3}}$

$2k^8$

18) $\dfrac{\left(x^{-3}\right)^4 x^4}{2x^{-3}}$

$\dfrac{1}{2x^5}$

19) $\dfrac{(2x)^{-4}}{x^{-1} \cdot x}$

$\dfrac{1}{16x^4}$

20) $\dfrac{\left(2x^3z^2\right)^3}{x^3y^4z^2 \cdot x^{-4}z^3}$

$\dfrac{8x^{10}z}{y^4}$

21) $\dfrac{\left(2pm^{-1}q^0\right)^{-4} \cdot 2m^{-1}p^3}{2pq^2}$

$\dfrac{m^3}{16p^2q^2}$

22) $\dfrac{\left(2hj^2k^{-2} \cdot h^4j^{-1}k^4\right)^0}{2h^{-3}j^{-4}k^{-2}}$

$\dfrac{h^3j^4k^2}{2}$

Name_____

Solving Quadratic Equations by Factoring

Date_____ Period_____

Solve each equation by factoring.

1) $(k + 1)(k - 5) = 0$

2) $(a + 1)(a + 2) = 0$

3) $(4k + 5)(k + 1) = 0$

4) $(2m + 3)(4m + 3) = 0$

5) $x^2 - 11x + 19 = -5$

6) $n^2 + 7n + 15 = 5$

7) $n^2 - 10n + 22 = -2$

8) $n^2 + 3n - 12 = 6$

9) $6n^2 - 18n - 18 = 6$

10) $7r^2 - 14r = -7$

11) $n^2 + 8n = -15$

12) $5r^2 - 44r + 120 = -30 + 11r$

13) $-4k^2 - 8k - 3 = -3 - 5k^2$

14) $b^2 + 5b - 35 = 3b$

15) $3r^2 - 16r - 7 = 5$

16) $6b^2 - 13b + 3 = -3$

17) $7k^2 - 6k + 3 = 3$

18) $35k^2 - 22k + 7 = 4$

19) $7x^2 + 2x = 0$

20) $10b^2 = 27b - 18$

21) $8x^2 + 21 = -59x$

22) $15a^2 - 3a = 3 - 7a$

Name_____

Solving Quadratic Equations by Factoring

Date_____ Period____

Solve each equation by factoring.

1) $(k+1)(k-5)=0$

$\{-1, 5\}$

2) $(a+1)(a+2)=0$

$\{-1, -2\}$

3) $(4k+5)(k+1)=0$

$\left\{-\dfrac{5}{4}, -1\right\}$

4) $(2m+3)(4m+3)=0$

$\left\{-\dfrac{3}{2}, -\dfrac{3}{4}\right\}$

5) $x^2-11x+19=-5$

$\{3, 8\}$

6) $n^2+7n+15=5$

$\{-5, -2\}$

7) $n^2-10n+22=-2$

$\{6, 4\}$

8) $n^2+3n-12=6$

$\{3, -6\}$

9) $6n^2-18n-18=6$

$\{4, -1\}$

10) $7r^2-14r=-7$

$\{1\}$

11) $n^2 + 8n = -15$

$\{-5, -3\}$

12) $5r^2 - 44r + 120 = -30 + 11r$

$\{6, 5\}$

13) $-4k^2 - 8k - 3 = -3 - 5k^2$

$\{8, 0\}$

14) $b^2 + 5b - 35 = 3b$

$\{-7, 5\}$

15) $3r^2 - 16r - 7 = 5$

$\left\{-\dfrac{2}{3}, 6\right\}$

16) $6b^2 - 13b + 3 = -3$

$\left\{\dfrac{2}{3}, \dfrac{3}{2}\right\}$

17) $7k^2 - 6k + 3 = 3$

$\left\{\dfrac{6}{7}, 0\right\}$

18) $35k^2 - 22k + 7 = 4$

$\left\{\dfrac{1}{5}, \dfrac{3}{7}\right\}$

19) $7x^2 + 2x = 0$

$\left\{-\dfrac{2}{7}, 0\right\}$

20) $10b^2 = 27b - 18$

$\left\{\dfrac{6}{5}, \dfrac{3}{2}\right\}$

21) $8x^2 + 21 = -59x$

$\left\{-\dfrac{3}{8}, -7\right\}$

22) $15a^2 - 3a = 3 - 7a$ $\left\{\dfrac{1}{3}, -\dfrac{3}{5}\right\}$

Create your own worksheets like this one with **Infinite Algebra 1**. Free trial available at KutaSoftware.com

Using the Quadratic Formula

Solve each equation with the quadratic formula.

1) $m^2 - 5m - 14 = 0$

2) $b^2 - 4b + 4 = 0$

3) $2m^2 + 2m - 12 = 0$

4) $2x^2 - 3x - 5 = 0$

5) $x^2 + 4x + 3 = 0$

6) $2x^2 + 3x - 20 = 0$

7) $4b^2 + 8b + 7 = 4$

8) $2m^2 - 7m - 13 = -10$

9) $2x^2 - 3x - 15 = 5$

10) $x^2 + 2x - 1 = 2$

11) $2k^2 + 9k = -7$

12) $5r^2 = 80$

13) $2x^2 - 36 = x$

14) $5x^2 + 9x = -4$

15) $k^2 - 31 - 2k = -6 - 3k^2 - 2k$

16) $9n^2 = 4 + 7n$

17) $8n^2 + 4n - 16 = -n^2$

18) $8n^2 + 7n - 15 = -7$

Name_____

Using the Quadratic Formula

Date_____ Period____

Solve each equation with the quadratic formula.

1) $m^2 - 5m - 14 = 0$

$\{7, -2\}$

2) $b^2 - 4b + 4 = 0$

$\{2\}$

3) $2m^2 + 2m - 12 = 0$

$\{2, -3\}$

4) $2x^2 - 3x - 5 = 0$

$\left\{\dfrac{5}{2}, -1\right\}$

5) $x^2 + 4x + 3 = 0$

$\{-1, -3\}$

6) $2x^2 + 3x - 20 = 0$

$\left\{\dfrac{5}{2}, -4\right\}$

7) $4b^2 + 8b + 7 = 4$

$\left\{-\dfrac{1}{2}, -\dfrac{3}{2}\right\}$

8) $2m^2 - 7m - 13 = -10$

$\left\{\dfrac{7 + \sqrt{73}}{4}, \dfrac{7 - \sqrt{73}}{4}\right\}$

9) $2x^2 - 3x - 15 = 5$

$$\left\{4, -\frac{5}{2}\right\}$$

10) $x^2 + 2x - 1 = 2$

$$\{1, -3\}$$

11) $2k^2 + 9k = -7$

$$\left\{-1, -\frac{7}{2}\right\}$$

12) $5r^2 = 80$

$$\{4, -4\}$$

13) $2x^2 - 36 = x$

$$\left\{\frac{9}{2}, -4\right\}$$

14) $5x^2 + 9x = -4$

$$\left\{-\frac{4}{5}, -1\right\}$$

15) $k^2 - 31 - 2k = -6 - 3k^2 - 2k$

$$\left\{\frac{5}{2}, -\frac{5}{2}\right\}$$

16) $9n^2 = 4 + 7n$

$$\left\{\frac{7 + \sqrt{193}}{18}, \frac{7 - \sqrt{193}}{18}\right\}$$

17) $8n^2 + 4n - 16 = -n^2$

$$\left\{\frac{-2 + 2\sqrt{37}}{9}, \frac{-2 - 2\sqrt{37}}{9}\right\}$$

18) $8n^2 + 7n - 15 = -7$

$$\left\{\frac{-7 + \sqrt{305}}{16}, \frac{-7 - \sqrt{305}}{16}\right\}$$

Name_____

Radical Equations - Part 1

Date_____ Period_____

Solve each equation. Remember to check for extraneous solutions.

1) $\sqrt{x} = 10$

2) $10 = \sqrt{\dfrac{m}{10}}$

3) $\sqrt{v - 4} = 3$

4) $6 = \sqrt{v - 2}$

5) $\sqrt{n} = 9$

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

7) $2 = \sqrt{4b}$

8) $\sqrt{n + 9} = 1$

9) $-8 + \sqrt{5a - 5} = -3$

10) $10\sqrt{9x} = 60$

11) $1 = \sqrt{x - 5}$

12) $-10\sqrt{v - 10} = -60$

13) $10 + \sqrt{10m - 1} = 13$

14) $-12 = -6\sqrt{b + 4}$

15) $\sqrt{v + 3} - 1 = 7$

16) $90 = 9\sqrt{25v}$

17) $\sqrt{3n} = \sqrt{4n - 1}$

18) $\sqrt{2n - 88} = \sqrt{\dfrac{n}{6}}$

19) $\sqrt{\dfrac{x}{10}} = \sqrt{3x - 58}$

20) $\sqrt{3n + 12} = \sqrt{n + 8}$

21) $\sqrt{n} = \sqrt{2n - 6}$

22) $\sqrt{11 - x} = \sqrt{x - 7}$

23) $\sqrt{72 - x} = \sqrt{\dfrac{x}{5}}$

24) $\sqrt{x + 3} = \sqrt{1 - x}$

25) $\sqrt{2k + 40} = \sqrt{-16 - 2k}$

26) $\sqrt{x + 8} = \sqrt{3x + 8}$

Name_____

Radical Equations - Part 1

Date_____ Period____

Solve each equation. Remember to check for extraneous solutions.

1) $\sqrt{x} = 10$

$\{100\}$

2) $10 = \sqrt{\dfrac{m}{10}}$

$\{1000\}$

3) $\sqrt{v - 4} = 3$

$\{13\}$

4) $6 = \sqrt{v - 2}$

$\{38\}$

5) $\sqrt{n} = 9$

$\{81\}$

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

$\{22\}$

7) $2 = \sqrt{4b}$

$\{1\}$

8) $\sqrt{n + 9} = 1$

$\{-8\}$

9) $-8 + \sqrt{5a - 5} = -3$

$\{6\}$

10) $10\sqrt{9x} = 60$

$\{4\}$

11) $1 = \sqrt{x - 5}$

$\{6\}$

12) $-10\sqrt{v - 10} = -60$

$\{46\}$

13) $10 + \sqrt{10m - 1} = 13$

$\{1\}$

14) $-12 = -6\sqrt{b + 4}$

$\{0\}$

15) $\sqrt{v + 3} - 1 = 7$

$\{61\}$

16) $90 = 9\sqrt{25v}$

$\{4\}$

17) $\sqrt{3n} = \sqrt{4n - 1}$

$\{1\}$

18) $\sqrt{2n - 88} = \sqrt{\dfrac{n}{6}}$

$\{48\}$

19) $\sqrt{\dfrac{x}{10}} = \sqrt{3x - 58}$

$\{20\}$

20) $\sqrt{3n + 12} = \sqrt{n + 8}$

$\{-2\}$

21) $\sqrt{n} = \sqrt{2n - 6}$

$\{6\}$

22) $\sqrt{11 - x} = \sqrt{x - 7}$

$\{9\}$

23) $\sqrt{72 - x} = \sqrt{\dfrac{x}{5}}$

$\{60\}$

24) $\sqrt{x + 3} = \sqrt{1 - x}$

$\{-1\}$

25) $\sqrt{2k + 40} = \sqrt{-16 - 2k}$

$\{-14\}$

26) $\sqrt{x + 8} = \sqrt{3x + 8}$

$\{0\}$

Create your own worksheets like this one with **Infinite Algebra 1**. Free trial available at KutaSoftware.com

Vocabulary

Sum – answer to an addition problem

Difference – answer to a subtraction problem

Product – answer to a multiplication problem

Quotient – answer to a division problem

Factor – a number being multiplied

Coefficient – the constant value of an algebraic expression

Expression – a sum, difference, product or quotient containing variables and/or constants

Equation – a defined relationship between two expressions

Simplify – to do all operations that can be done (if there is no equal sign, you cannot solve for the unknown)

Factoring – to reverse the process of multiplication in order to identify the original factors

Solve – only equations can be solved for a variable

Evaluate – use substitution to rewrite an expression using only constants and find the overall value

Radicand – the expression found under a radical hat

Index – AKA "root" of a radical expression

Constant – a number or symbol that represents a constant value ($\pi \approx 3.14, e \approx 2.72$)

Variable – represented with a letter; its value will vary (change)

Integer – (…, -3, -2, -1, 0, 1, 2, 3, …)

Irrational – a number that *cannot* be expressed as a fraction of integers ($\sqrt{3}, \pi, e, \dots$)

Rational – any number that can be expressed as a *fraction* of integers ($\frac{1}{3}, 2.5, \sqrt{25}, \frac{\sqrt[3]{27}}{\sqrt{16}}, \dots$)