

Table 1- Simplifying Rational Expressions

$$\frac{28c^5}{21c^3}$$

$$21c^3$$

$$\frac{x-4}{3x^2-12x}$$

$$\frac{3x-6}{x^2-5x+6}$$

$$\frac{x^2-25}{x^2-3x-10}$$

$$\frac{x^2-5x-24}{x^2-64}$$

$$\frac{r^2-r-12}{r^2-13r+36}$$

Table 2- Multiplying/Dividing Rational Expressions

$$\frac{p^2 + 11p + 18}{p + 9} \cdot \frac{p + 2}{8}$$

$$\frac{9z - 9}{z^2 + 19z + 84} \cdot \frac{z + 7}{9z - 9}$$

$$\frac{r^2 + 18r + 80}{2r + 16} \cdot \frac{r + 6}{9r^3 + 54r^2}$$

$$\frac{6}{28x + 4} \div \frac{6}{35x + 5}$$

$$\frac{15 - 5x}{x^2 - x - 6} \div \frac{5x}{x^2 + 6x + 8}$$

Table 3 - Rational Equations

1.
$$\frac{x+1}{4} = \frac{3}{x-3}$$

2.
$$\frac{x^2-1}{x+2} = \frac{2x-1}{2}$$

3.
$$\frac{1}{n-8} - 1 = \frac{7}{n-8}$$

4.
$$\frac{x}{x-1} - \frac{2}{x} = \frac{1}{x-1}$$

5.
$$\frac{4}{x+2} = \frac{3}{x+1}$$

Table 4 - Review

1. Solve: $-3(4x + 3) + 4(6x + 1) = 43$

2. Solve: $2(4x - 3) - 8 = 4 + 2x$

3. Simplify: $(x - 4)(3x + 2)$

4. Simplify: $(2x + 3)(2x + 5)$

5. Write a two- column proof:

Given: $2(x + 4) + 2x = 16$

Prove: $x = 2$

Table 5

Name the midline, period, amplitude, and horizontal shift if it applies.

1. $y = 3 \sin(2x) - 2$

2. $y = \cos(5x + 45) + 1$

3. $y = 2 \sin x - 3$

Write the equation with the given information.

4. midline= 2 period= 360 amplitude= 1 horizontal shift= none

5. midline= 1 period= 60 amplitude= 3 horizontal shift= 30° to the right

6. midline= 0 period= 120 amplitude= 2 horizontal shift= 60° to the left

Table 6- Solve by factoring

1.

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

2.

$$x^2 + -12x + 27 = 0$$

3.

$$b^2 + 12b + 35 = 0$$

4.

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

5.

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

Table 7 - Inverses

Decide whether the 2 functions are inverses of each other.

1.

$$f(n) = \frac{-16 + n}{4}$$

$$g(n) = 4n + 16$$

2.

$$g(n) = \frac{-12 - 2n}{3}$$

$$f(n) = \frac{-5 + 6n}{5}$$

3.

$$g(x) = 4 - \frac{3}{2}x$$

$$f(x) = \frac{1}{2}x + \frac{3}{2}$$

Find the inverse of each function.

1.

$$g(x) = \frac{1}{x} - 2$$

2

$$g(x) = -4x + 1$$

3.

$$g(x) = \frac{7x + 18}{2}$$

Table 8- Adding/Subtracting Rational Expressions

1.

$$\frac{7p^3 - 5}{6p^4 + 8p^3} - \frac{2p^3 - 8}{6p^4 + 8p^3}$$

2.

$$\frac{8k}{4} - \frac{7k - 9}{2k + 2}$$

3.

$$\frac{7}{x} + \frac{6}{x + 5}$$

4.

$$\frac{4h}{6} - \frac{8h - 3}{3h + 8}$$

5.

$$\frac{4}{x^2 - 25} + \frac{6}{x^2 + 6x + 5}$$