

Choose wisely.

1) Simplify $\frac{4x+3}{x^2-16} + \frac{2}{x-4}$

$$\frac{4x+3}{x^2-16} + \frac{2(x+4)}{x^2-16} = \frac{6x+11}{x^2-16}$$

2) Find the LCM of the given values.

4x, 8x+16, 12
 4x, 8(x+2), 12
 4x: 4 · x
 8x+16: 2 · 4 · (x+2) LCM: 2 · 3 · 4 · x · (x+2)
 12: 4 · 3
 $24x(x+2)$

3) Simplify $\frac{28x(w-6)}{(z-1)} \div \frac{7x^3}{(z-1)^2}$

$$\frac{28x(w-6)}{(z-1)} \cdot \frac{(z-1)(z-1)}{7x^3x^2} = \frac{4(w-6)(z-1)}{7x^2}$$

4) Solve;

$\frac{x-1}{x} + \frac{2x-1}{x+3} = \frac{x+6}{x+3}$? LCM: x(x+3)
 mult. LCM to fractions
 $(x-1)(x+3) + x(2x-1) = x(x+6)$
 $x^2+2x-3 + 2x^2-x = x^2+6x$
 $2x^2-5x-3=0$ $x = -\frac{1}{2}$ $x = 3$

5) What is the solution of the equation:

$\frac{3x}{x+1} - \frac{5}{2x} = \frac{3}{2x}$ LCM: 2x(x+1)
 $3x(2x) - 5(x+1) = 3(x+1)$
 $6x^2 - 5x - 5 = 3x + 3$
 $6x^2 - 8x - 8 = 0$
 $3x^2 - 4x - 4 = 0$
 $x = -\frac{2}{3}$ $x = 2$

6) Solve the rational equation below:

$x + \frac{11}{3} = \frac{4}{3x}$ LCM: 3x
 $3x(x) + 11(x) = 4$
 $3x^2 + 11x - 4 = 0$
 $(3x-1)(x+4) = 0$
 $x = \frac{1}{3}$ $x = -4$

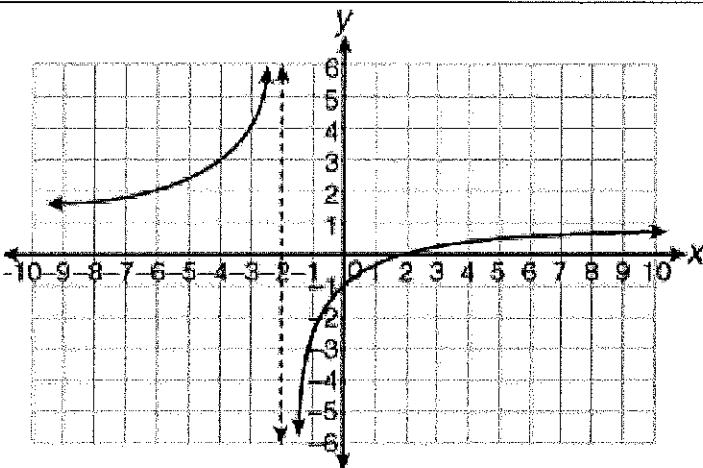
7) Solve for x. $\frac{-3(x^2+1)+x(5x+1)}{(2x+3)^2} = 0$

$-3x^2 - 3 + 5x^2 + x = 0$
 $2x^2 + x - 3 = 0$
 $(2x+3)(x-1) = 0$
 ~~$x = -\frac{3}{2}$~~ {Extraneous} Division by 0.
 $x = 1$

8) The graph of the coordinate grid on the right represents the function $f(x) = \frac{x-2}{x+2}$.

What is the value of $f(-4)$?

$$f(-4) = \frac{(-4)-2}{(-4)+2} = \frac{-6}{-2} = 3$$



9) Simplify:

$$\frac{16}{\frac{x-2}{4} + \frac{6}{x+1}}$$

LCM: $x(x+1)(x-2)$

$$\frac{16(x)(x+1)}{4(x)(x-2) + 6(x+1)(x-2)} = \frac{16x^2 + 16x}{4x^2 - 8x + 6x^2 - 6x - 12}$$
$$= \frac{16x^2 + 16x}{10x^2 - 14x - 12} = \boxed{\frac{8x^2 + 8x}{5x^2 - 7x - 6}}$$

10) Simplify:

$$\frac{3}{x-2} - \frac{6}{x^2-4}$$

LCM: $(x-2)(x+2)$

$$\frac{3(x+2) - 6}{3(x-2) + 1(x+2)} = \frac{3x + 6 - 6}{3x - 6 + x + 2} = \boxed{\frac{3x}{4x - 4}}$$