W varies jointly with C and the cube of M and inversely with the product of G and the square of X.

W=0.648 when M=3, C=6, G=8, and X=10.

Find the value of M when W=500, C=5, G=2, and X=11

$$W = k\frac{C \cdot M^3}{G X^2}$$

$$.648 = k\frac{6 \cdot 27}{8 \cdot 100}$$

$$k = 3.2$$

$$W = 3.2\frac{C \cdot M^3}{G X^2}$$

$$500 = 3.2\frac{5M^3}{2 \cdot 121}$$

$$M^3 = 7562.5$$

$$m = \sqrt[3]{7562.5} = 19.63$$

Simplify.

$$\frac{\frac{5}{x^2-9}+\frac{x}{x^2-x-12}}{\frac{3}{4x^2-28x+48}} \rightarrow 4(x^2-7x+12)$$

$$\frac{\frac{4(x-4)}{4(x-4)(x+3)(x-3)}\cdot\frac{5}{1}+\frac{x}{(x-4)(x+3)}\cdot\frac{4(x-3)}{4(x-3)}}{\frac{3}{4(x-3)(x-4)}\cdot\frac{(x+3)}{(x+3)}} = \frac{20x-80+4x^2-12x}{3(x+3)}$$

$$= \frac{4x^2+8x-80}{3(x+3)}$$