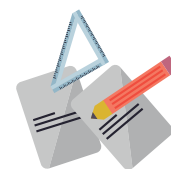# Rational Expressions

A **rational expression** is a fraction in which the numerator and/or the denominator are polynomials.

1. The expression $\frac{4}{x-6}$ makes no sense when

   a) $x = 4$        b) $x = -4$        c) $x = 6$        d) $x = -6$

2. The expression $\frac{5-3a}{2a}$ equals 1, when

   a) $a = 2$        b) $a = -1$        c) $a = 0$        d) $a = 1$

3. Determine the value of expression $\frac{5x}{4-\frac{4}{x}}$ when

   a) $x = 1$        b) $x = 2$        c) $x = -\frac{1}{3}$        d) $x = -1$

4. What number should both the numerator and the denominator of the expression $\frac{5}{4a}$ be multiplied by to get $\frac{30}{24a}$ ?

5. Find the common denominator for the given expressions

   a) $\frac{1}{3a}$ and $\frac{1}{9a}$                    b) $\frac{1}{2a+1}$ and $\frac{1}{4a+2}$

The word "ratio" comes from Latin and means "relative value" or "quantitative relation". Fractions are "rational numbers", because they demonstrate quantitative relation between two values. In a fraction, both the numerator and denominator are whole numbers, where the denominator is not zero. In a rational number, the numerator and denominator are integers (positive or negative) and the denominator cannot equal to zero.