

## Answer on Question #74490 – Math – Algebra

### Question

In the following equation solve the unknown variable

$$\frac{5}{8}k + \frac{2}{6}k = k - \frac{1}{2}.$$

### Solution

The equation can be solved as follows:

$$\frac{5}{8}k + \frac{2}{6}k = k - \frac{1}{2},$$

$$\left(\frac{5}{8} + \frac{2}{6}\right)k = k - \frac{1}{2},$$

$$\left(\frac{5}{8} + \frac{1}{3}\right)k = k - \frac{1}{2},$$

$$\frac{5 \times 3 + 8}{24}k = k - \frac{1}{2},$$

$$\frac{23}{24}k = k - \frac{1}{2},$$

$$\frac{23}{24}k - k = -\frac{1}{2},$$

$$\left(\frac{23}{24} - 1\right)k = -\frac{1}{2},$$

$$\frac{23 - 24}{24}k = -\frac{1}{2},$$

$$\frac{-1}{24}k = -\frac{1}{2},$$

$$k = -\frac{1}{2} \div \left(\frac{-1}{24}\right),$$

$$k = -\frac{1}{2} \times \left(-\frac{24}{1}\right)$$

$$k = \frac{24}{2} = 12.$$

**Answer:**  $k = 12$ .