

## Fractions

### Notes

#### *Reciprocal*

#### *Fractions in algebra*

Cross multiplication

$$\frac{60-4x}{5} = \frac{12x+3}{10}$$

Multiply the LCM of the denominators

$$\frac{r+7}{4} + \frac{2r+2}{2} = -4$$

$$\frac{1}{4} = \frac{5}{7x} + 2$$

#### *Fractions with exponents and square roots*

$$\left(\frac{a}{b}\right)^n =$$

$$\sqrt{\frac{a}{b}} =$$

$$\left(\frac{12}{72}\right)^3 =$$

$$\sqrt{\frac{121}{81}} =$$

**Discussion questions**

1. Find the reciprocal of  $1\frac{1}{3} - \frac{1}{5}$ .

2. Calculate:  $1 + \frac{1}{2 + \frac{1}{3 + \frac{1}{4 + \frac{1}{5}}}}$

3. We have  $36\frac{3}{4}$  yards of material available to make flags. Each flag requires  $\frac{5}{8}$  yard of material. After the maximum number of flags have been made, how much material will be left over?

4. Find the answer for  $(\frac{2}{5})^4 \cdot \sqrt{\frac{225}{256}}$

5. Find the variable's value.  $\frac{1}{3x} + \frac{3}{2x} = 6$

### Practice questions

1. Four of the following are equal. Which is the odd one out?

(A)  $\frac{1}{12} + \frac{2}{3}$       (B)  $\frac{13}{20} + \frac{1}{10}$       (C)  $\frac{5}{12} + \frac{1}{6}$       (D)  $\frac{1}{4} + \frac{1}{2}$       (E)  $\frac{11}{20} + \frac{1}{5}$

2. A water tank contains 48 liters when it is half full. How much water needs to be added so that it will be  $\frac{2}{3}$  full?

3. A standard fair coin is tossed three times. What is the probability that the three outcomes are all the same?