

Use fractions in algebraic contexts

1 Work out the missing numbers.

a) $\frac{3}{8} + \square = \frac{5}{8}$

c) $3 + \square = 3\frac{3}{4}$

b) $\square + \frac{1}{4} = \frac{3}{4}$

d) $5 - \square = 4\frac{5}{6}$

2 Solve the equations.

a) $x + 3 = 5$

$x = \square$

c) $x - 3 = 5\frac{1}{3}$

$x = \square$

b) $x + 3 = 5\frac{1}{3}$

$x = \square$

d) $6\frac{1}{3} = x - 3$

$x = \square$

3 If $s = 2$, work out the value of these expressions.

Give your answers as mixed numbers.

a) $\frac{1}{s} + \frac{3}{s^2} = \square$

b) $\frac{7}{s^2} - \frac{2}{s} = \square$

c) $\frac{1}{s} + \frac{1}{s} + \frac{2}{s} + 5\frac{1}{7} = \square$



4 Substitute the values $g = 4$ and $h = 3$ into the expressions. Give your answers as improper fractions.

a) $g + \frac{1}{g} = \square$

$h + \frac{1}{h} = \square$

What do you notice about the answers?

b) $1 + \frac{g}{h} = \square$

$1 + \frac{h}{g} = \square$

Which answer was greater? Will this be true for any values of g and h ?

c) $g - \frac{g}{h} = \square$

$h - \frac{h}{g} = \square$



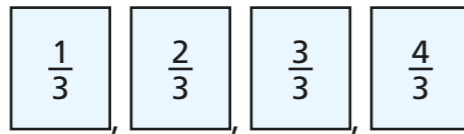
No values of g and h will ever give a negative answer.

Do you agree with Dexter? _____

Talk about it with a partner.



5 Here is the start of the sequence $\frac{n}{3}$



a) Write the next four terms of the sequence.

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b) How many of the terms in part a) are whole numbers?

c) Which term will produce $5\frac{2}{3}$?

d) How many terms out of the first 100 terms will be integers?

e) How often will the sequence $\frac{2n}{3}$ produce integers?
Show your working.

f) How often will the sequence $\frac{3n}{n}$ produce integers?
Show your working.



6 Solve the equations.

a) $x + \frac{2}{3} - \frac{5}{6} = 0$

$x =$

b) $\frac{5}{2} = x + \frac{1}{5}$

$x =$

c) $\frac{16}{7} - \frac{12}{56} = x + 2\frac{1}{2}$

$x =$

d) $\frac{300}{7} + x - \frac{1}{3} = \frac{586}{14} + \frac{4}{6}$

$x =$