1.1.2 Fractions

A unit fraction is a fraction with numerator 1

 $\frac{1}{2}$ "one over two" or "one half" $\frac{1}{3}$ "one over three" or "one third"

 $\frac{1}{4}$ "one over four" or "one fourth" $\frac{1}{5}$ "one over five" or "one fifth"

 $\frac{1}{10}$ "one over" or "one" $\frac{1}{100}$ "one over" or "one"

 $\frac{1}{14}$ "one over" or "one" 0.027 is "twenty seven thousandths"

Exercise 30 — Guess my number. Use the clues to work out which number in the grid is being described:

My number is more than 0.25. My number contains the digit 9. My number has a 3 in the hundredths column. My number is less than 7 tenths. The digit in the tenths column is odd.

0.83	0.31	0.21	0.47	0.9
0.73	0.1	0.293	0.09	0.639
0.24	0.92	1.5	0.539	0.86

An positive (or nil) integer are called **whole** number.

An **improper fraction** is a fraction that is more than 1 whole. For example $\frac{5}{4}$ or $\frac{13}{10}$.

A **mixed number** is an interger + a fraction : $3\frac{1}{10} = 3.1$ or $5\frac{1}{4} = 5.25$.

The **reciprocal** of $\frac{3}{4}$ is $\frac{4}{3}$. The **reciprocal** of $\frac{1}{5}$ is $\frac{5}{1} = 5$.

Exercise 31 Write as whole numbers:

$$\frac{15}{3} = \dots \qquad \frac{18}{2} = \dots \qquad \frac{24}{6} = \dots$$

Exercise 32 Write as a mixed number:

$$\frac{23}{10} = \dots \qquad \frac{43}{20} = \dots \qquad \frac{13}{3} = \dots$$

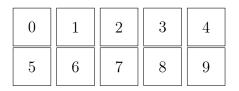
Exercise 33 Write as improper fractions:

$$2\frac{2}{5} = \dots \qquad 1\frac{1}{8} = \dots \qquad 3\frac{4}{9} = \dots$$

Exercise 34 Work out the reciprocals of $3\frac{2}{5}$.

Exercise 35 — Arrange the Digits.

Using each of these digits just once each, make the following statements true:





1.1.3 Writing algebraic expressions and equations

■ Example 1.2 — From algebraic expressions to word expressions.

"one more than x " or "one plus x "
"one less than x " or " x minus one"
"two lots of x then plus 1" or "two times x then add one" $\dots 2x + 1$
"four lots of all of x minus one" or "four times all of x minus one"
Exercise 36 — Get cozy with expressions. Complete each line for matching algebraic and word expressions.
1) two more than x
2) y more than negative six
3) three lots of x
4) two lots of x then plus four
5) the total of three times x then plus negative four
6) four lots of all of double y subtract one
7) the total of x and y
8) square root of all of six add y seven times x add three
9) the square of three lots of y ten less than y , then all divided into five
10) $y - 12$
11)
12) $x - 3y + 4$

Exercise 37 For each case, x is the number. Write down an equation and solve it for x.

a number, multiply it by 5 then add 6 and the result is 2.

a number, multiply by 3 then take away 7 and the result is 8.

a number, half it, then take away 4 and the result is 11.

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