

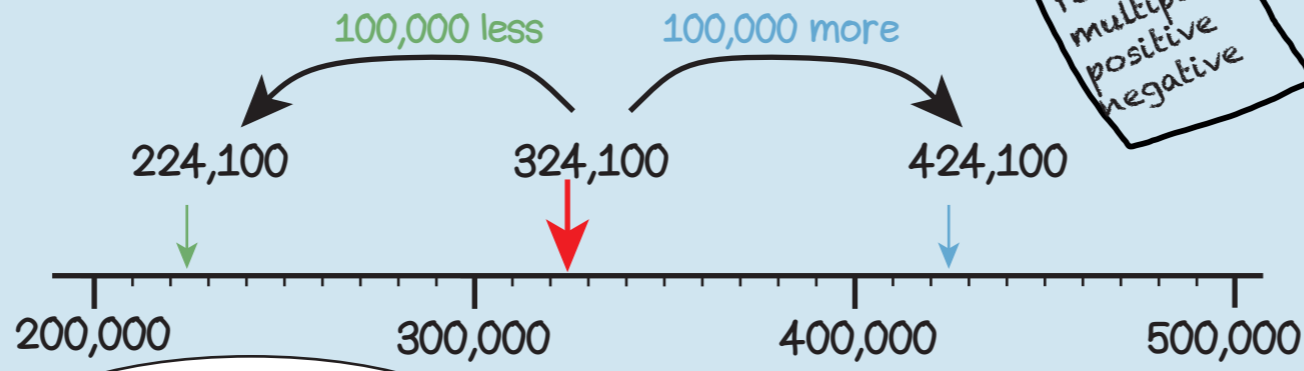
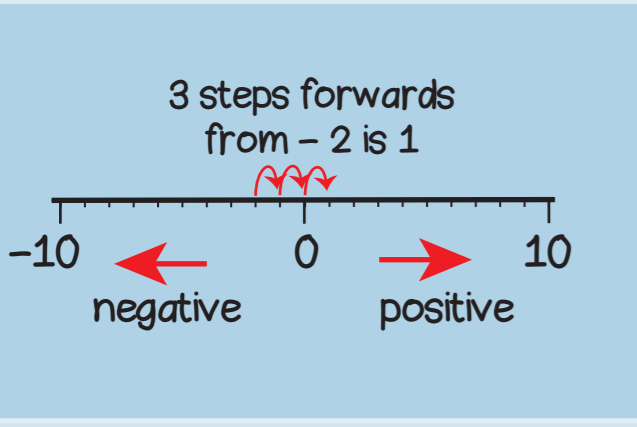
In order from smallest to largest

543,241 564,406 570,540

Stop and look.
What do you notice?

thousands
digit
round
multiple
positive
negative

six hundred and twenty-three thousand, one hundred and forty-five
6 hundred thousands, 2 ten thousands, 3 thousands, 1 hundred, 4 tens and 5 ones

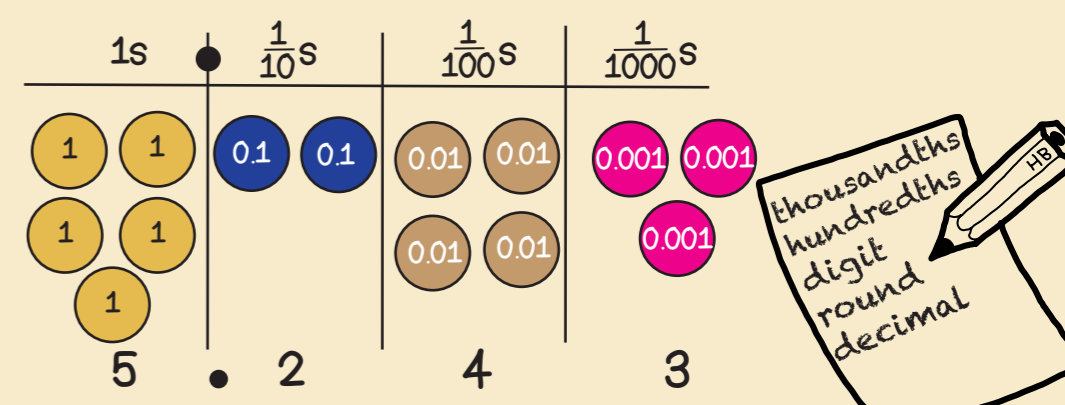


5 or more - round up
4 or less - round down

Round to the nearest ten thousand



Round to the nearest hundred thousand



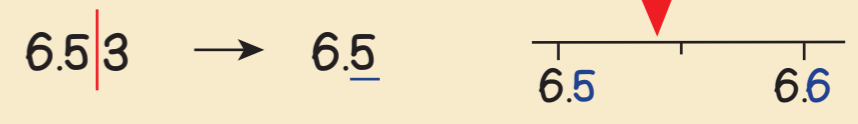
five point two, four, three
5 ones, 2 tenths, 4 hundredths, 3 thousandths

Compare decimals

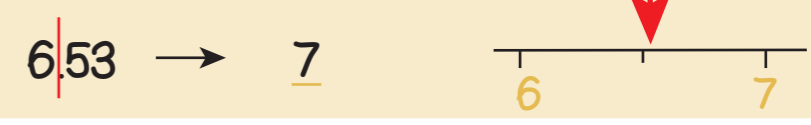
$2.345 > 2.343$ $2.455 > 2.343$ $2.3 > 2.299$

5 or more - round up
4 or less - round down

Round to the nearest tenth.

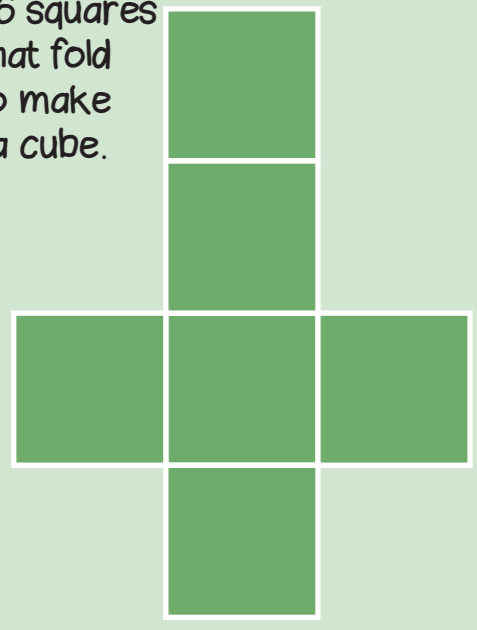


Round to the nearest whole number



Year 5 Term 1

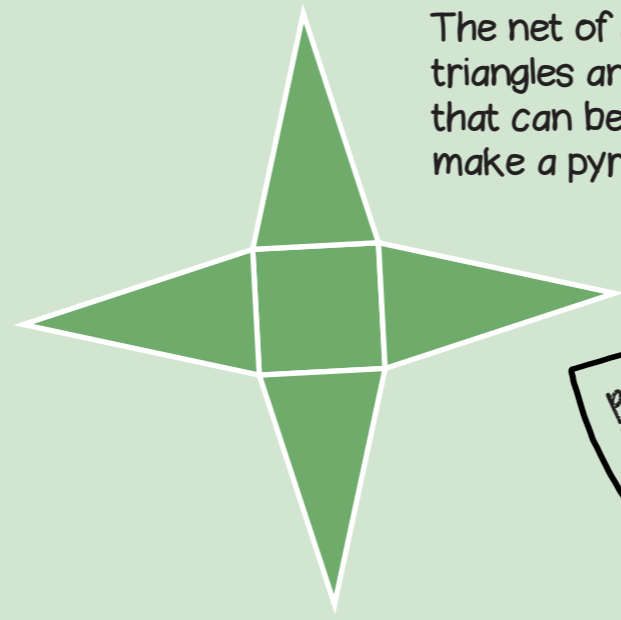
The net of a cube has 6 squares that fold to make a cube.



The net of a cuboid has 6 rectangles that fold to make a cuboid.

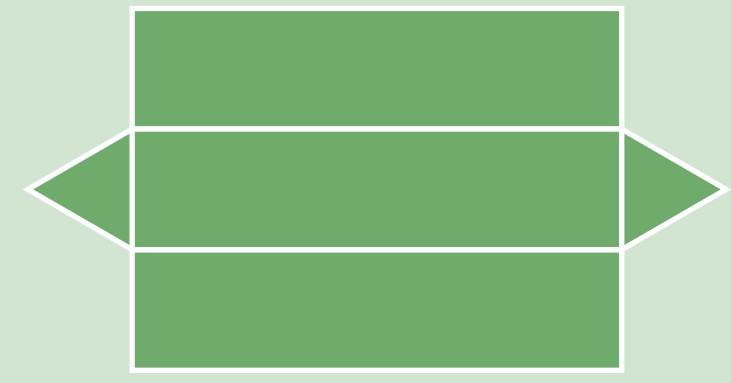


The net of a pyramid has triangles and a polygon that can be folded to make a pyramid.



prism
pyramid
net
polygon

The net of a prism has rectangles and two identical polygons that can be folded to make a prism.



Multiplying and dividing by 10, 100 and 1000

| M | HTh | TTh | Th | 100s | 10s | 1s | $\frac{1}{10}$ | $\frac{1}{100}$ | $\frac{1}{1000}$ |
|---|-----|-----|----|------|-----|----|----------------|-----------------|------------------|
| | | | | | 1 | 3 | 6 | | |
| | | | | 1 | 3 | 6 | | | |
| | | 1 | 3 | 6 | 0 | 0 | | | |
| | | | | | | | | | |
| | | | | | 2 | 4 | 7 | | |
| | | | | | | 2 | 4 | 7 | |
| | | | | | | 0 | 2 | 4 | 7 |

Each digit is ten times greater.

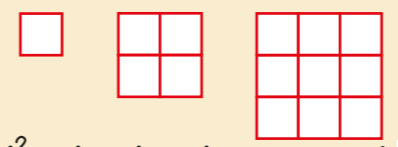
Each digit is ten times smaller.

millions
digit
round
multiple
positive
negative

13.6×10
move digits 1 column left
 13.6×1000
move digits 3 columns left

$24.7 \div 10$
move digits 1 column right
 $24.7 \div 100$
move digits 2 columns right

| | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|-----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |
| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 |
| 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 |
| 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 |
| 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |



$1^2 = 1 \times 1 = 1$
 $2^2 = 2 \times 2 = 4$
 $3^2 = 3 \times 3 = 9$

A square number is the result of multiplying a number by itself.

$1^3 = 1 \times 1 \times 1 = 1$
 $2^3 = 2 \times 2 \times 2 = 8$
 $3^3 = 3 \times 3 \times 3 = 27$

A cube number is the result of multiplying a whole number by itself, then by itself again.



prime
common
factor
multiple
multiplier
divisor

A prime number has exactly 2 factors: 2, 3, 5, 7, 11, 13, 17, 19...
A composite number has more than 2 factors: 4, 6, 8, 9, 10, 12...
If I know... then I also know... because...

Factors of 15 = {1, 3, 5, 15}
Factors of 21 = {1, 3, 7, 21}
1 and 3 are common factors of 15 and 21
Multiples of 3 are 3, 6, 9, 12
Multiples of 4 are 4, 8, 12, 16
12 is a common multiple of 3 and 4

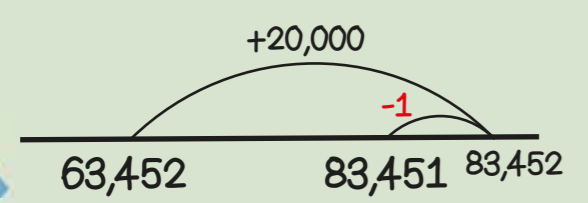
Year 5 Term 2



63,452 + 19,999
Round then adjust

| 10,000s | 1000s | 100s | 10s | 1s |
|---------------|-------------|---------|-------|---------------------------|
| 10,000 10,000 | 1,000 1,000 | 100 100 | 10 10 | 1 1 |
| 10,000 10,000 | 1,000 | 100 100 | 10 10 | 1 1 |
| 10,000 10,000 | | | 10 | |
| 10,000 10,000 | | | | |

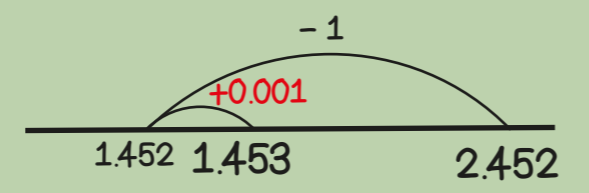
Add 20,000 then subtract 1



2.452 - 0.999
Round then adjust

| 1s | $\frac{1}{10}$ s | $\frac{1}{100}$ s | $\frac{1}{1000}$ s |
|---------------------------|------------------|-------------------|--------------------|
| 1 1 | 0.1 0.1 | 0.01 0.01 | 0.001 0.001 |
| 1 1 | 0.1 0.1 | 0.01 0.01 | |
| | | 0.01 | 0.001 |

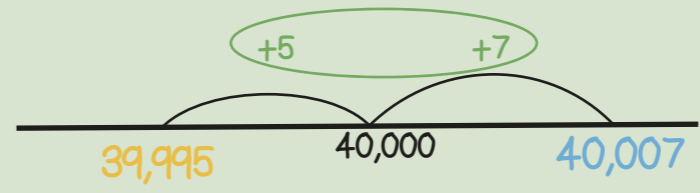
Take away 1 then add 1 thousandth



40,007 - 39,995
Find the difference between two numbers

| |
|--------|
| 40,007 |
| 39,995 |
| 12 |

Count on 5 from 39,995 to 40,000, then 7 more so the difference between them is 12



Written methods

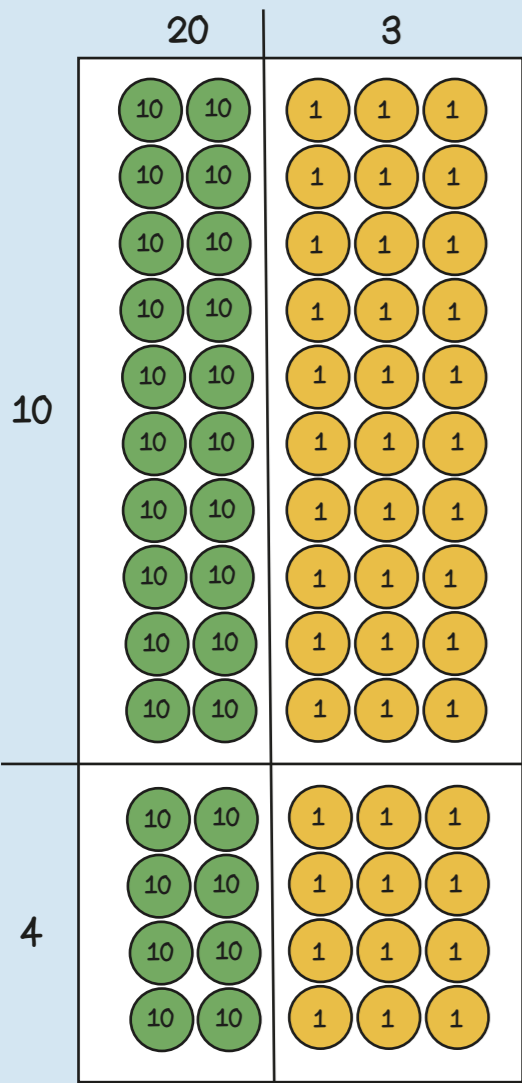
$$\begin{array}{r} 25,648 \\ + 42,524 \\ \hline 68,172 \end{array}$$

$$\begin{array}{r} 25.648 \\ + 42.524 \\ \hline 68.172 \end{array}$$

sum
total
subtract
difference



$$23 \times 14$$



| | | |
|----|-----|----|
| | 20 | 3 |
| 10 | 200 | 30 |
| 4 | 80 | 12 |

$$\begin{array}{r} 23 \\ \times 14 \\ \hline 92 \\ 230 \\ \hline 322 \end{array}$$

When I multiply the multiplicand by the tens digit of the multiplier I put a zero in the ones column.

$$\begin{array}{r} 623 \\ \times 67 \\ \hline 4361 \\ 37380 \\ \hline 41741 \end{array}$$

In my head?
With jottings?
Formal written method?

$$426 \times 50 = 426 \times 100 \div 2 = 42600 \div 2 = 21300$$

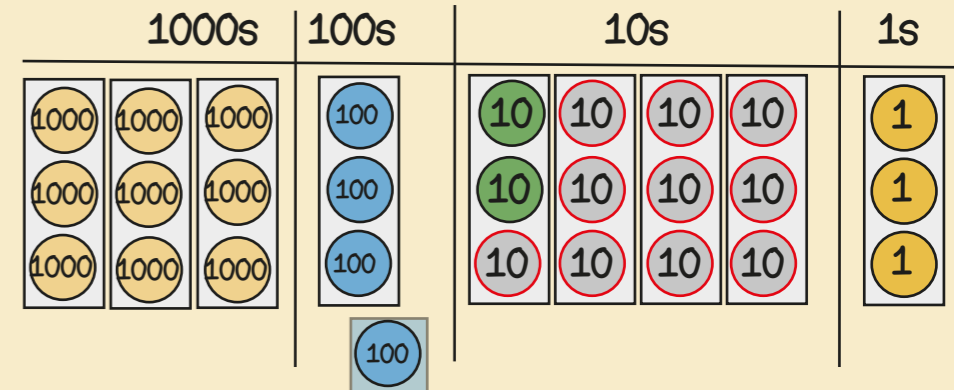
$$30 \times 99 = 30 \times 100 - 30 \times 1 = 3000 - 30 = 2970$$

$0.4 \times 7 = ?$
If I know $4 \times 7 = 28$
then I also know that $0.4 \times 7 = 2.8$
because it is ten times smaller.

$2.4 \times 3 = ?$
If I know $24 \times 3 = 72$
then I also know $2.4 \times 3 = 7.2$
because it is ten times smaller.

$$\begin{array}{r} 24 \\ \times 3 \\ \hline 72 \end{array}$$

$$9423 \div 3 = 3141$$



If I know... then I also know... because...

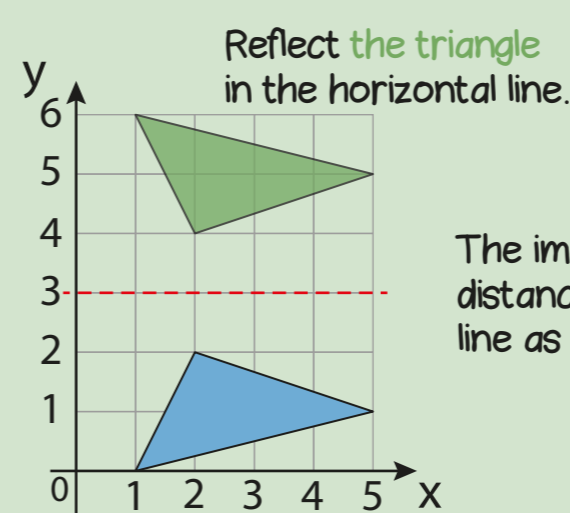
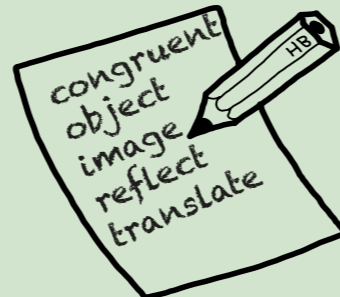
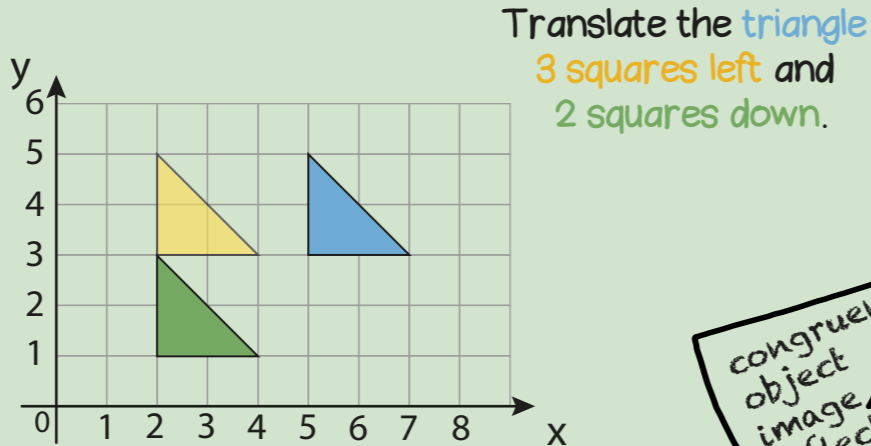
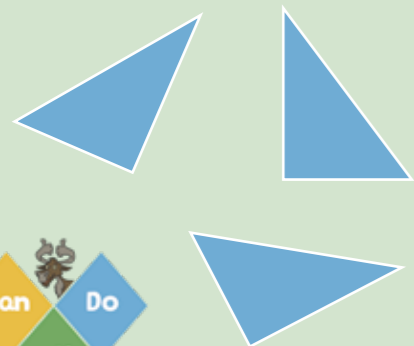
$$0576r1$$

$$6 \overline{) 3437}$$

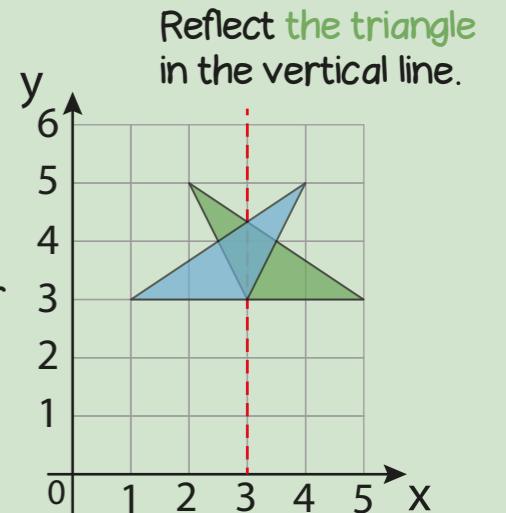
| | |
|----|----|
| 1 | 6 |
| 2 | 12 |
| 4 | 24 |
| 5 | 30 |
| 8 | 48 |
| 10 | 60 |

Year 5 Term 3

Congruent shapes are exactly the same shape and size.

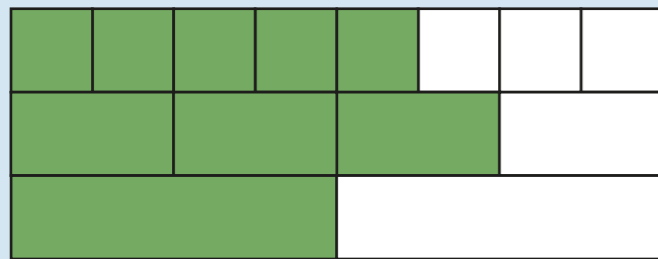


The image is the same distance from the mirror line as the object.



Use equivalence to compare

$$\frac{5}{8} \quad \frac{3}{4} \quad \frac{1}{2}$$



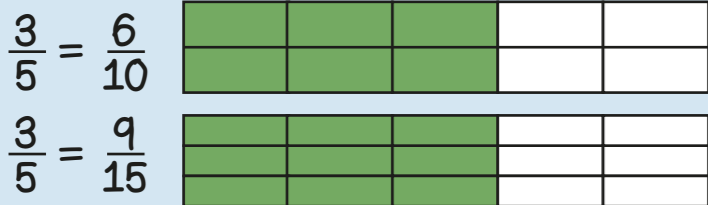
$$\frac{3}{4} = \frac{6}{8}$$

$$\frac{1}{2} = \frac{4}{8}$$

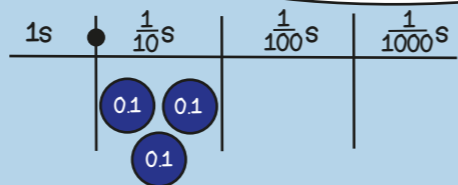
$$\frac{1}{2} < \frac{3}{4} < \frac{5}{8}$$



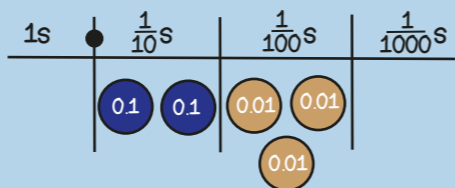
If there are 2 times as many equal parts, then there are 2 times as many shaded parts



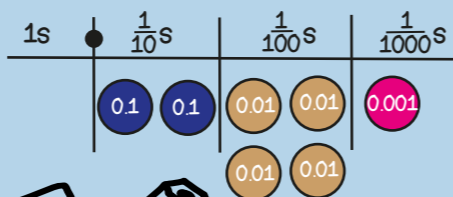
Decimals as fractions



$$0.3 = \frac{3}{10}$$

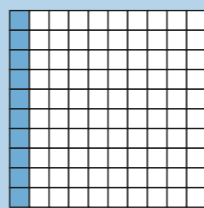


$$0.23 = \frac{23}{100}$$



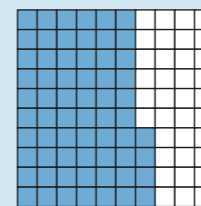
$$0.241 = \frac{241}{1000}$$

denominator
numerator
equivalence
thousandths
percentage

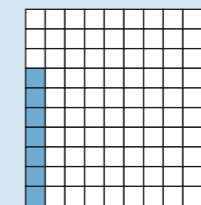


$$\frac{10}{100} = \frac{1}{10}$$

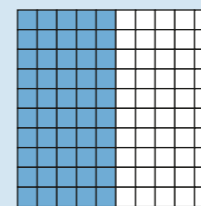
Percentage, decimal, fraction equivalence



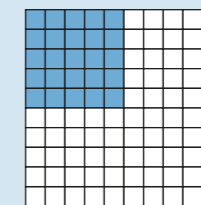
$$\frac{64}{100} = 0.64 = 64\%$$



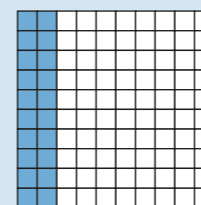
$$\frac{7}{100} = 0.07 = 7\%$$



$$\frac{1}{2} = \frac{50}{100} = 0.5 = 50\%$$



$$\frac{1}{4} = \frac{25}{100} = 0.25 = 25\%$$



$$\frac{1}{5} = \frac{20}{100} = 0.2 = 20\%$$

If I know $\frac{1}{5} = 20\%$ then I also know... because...



Year 5 Term 4



Converting units by multiplying and dividing by 10, 100 and 1000

13.6×10
move digits 1 place left

13.6×1000
move digits 3 places left

$13.6 \div 10$
move digits 1 place right

$13.6 \div 100$
move digits 2 places right

imperial
metric
convert
perimeter
rectilinear

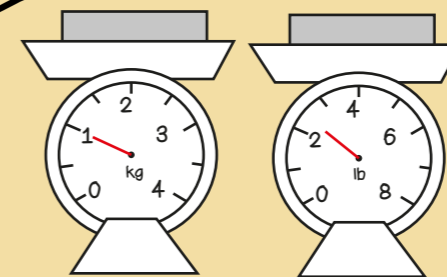
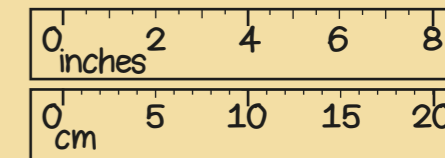


Missing width = $w = 7 + 6 = 13\text{cm}$

Missing height = $h = 9 - 4 = 5\text{cm}$

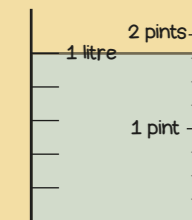
Perimeter
= $9 + 7 + h + 6 + 4 + w$
= 44cm

$2.5\text{cm} = \text{approximately } 1 \text{ inch}$



$1\text{kg} = \text{approximately } 2 \text{ pounds}$

$1 \text{ litre} = \text{approximately } 2 \text{ pints}$



| M | HTh | TTh | Th | 100s | 10s | 1s | $\frac{1}{10}$ | $\frac{1}{100}$ | $\frac{1}{1000}$ |
|---|-----|-----|----|------|-----|----|----------------|-----------------|------------------|
| | | | | | 1 | 3 | 6 | | |
| | | | | 1 | 3 | 6 | ← | | |
| | | 1 | 3 | 6 | 0 | 0 | ← | | |
| | | | | | | 1 | 3 | 6 | |
| | | | | | | 0 | 1 | 3 | 6 |

Ten times greater

Ten times smaller

$1\text{m} = 100 \text{ cm}$
 $13.6 \times 100 = 1360$
so $13.6\text{m} = 1360\text{cm}$

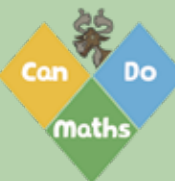
$1\text{km} = 1000 \text{ m}$
 $13.6 \times 1000 = 13600$
so $13.6\text{km} = 13,600\text{m}$

$1\text{l} = 1000 \text{ ml}$
 $13600 \div 1000 = 13.6$
so $13,600\text{ml} = 13.6\text{litres}$

$1\text{cm} = 10 \text{ mm}$
 $13.6 \times 10 = 136$
so $13.6\text{cm} = 136\text{mm}$

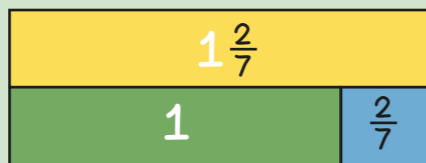
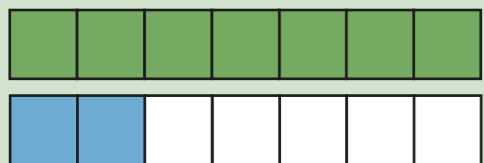
When converting from a larger unit to a smaller unit, multiply because there will be more of them.

$1\text{kg} = 1000 \text{ g}$
 $1360 \div 1000 = 1.36$
so $1360\text{g} = 1.36\text{kg}$



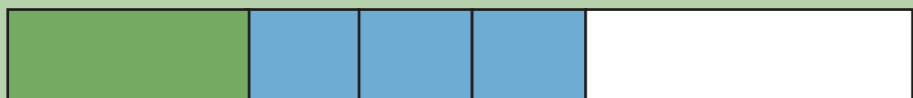
$$\frac{9}{7} = 1\frac{2}{7}$$

One and two sevenths is the whole
One is a part
Two sevenths is a part



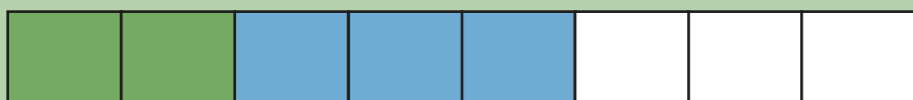
$$\frac{1}{4} + \frac{3}{8} =$$

I can't describe the sum!



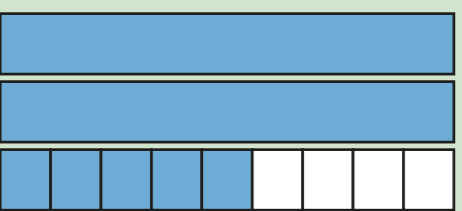
$$\frac{1}{4} = \frac{2}{8}$$

Find a common denominator.



$$\frac{2}{8} + \frac{3}{8} = \frac{5}{8}$$

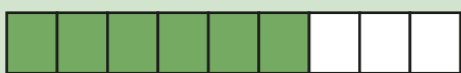
I can add fractions with the same denominator.



$$2\frac{5}{9} + \frac{2}{3} =$$

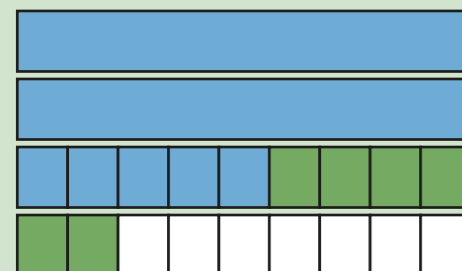
Add the fractions by finding a common denominator.

$$\frac{2}{3} = \frac{6}{9}$$



$$2\frac{5}{9} + \frac{6}{9} = 2\frac{11}{9}$$

$$= 3\frac{2}{9}$$



$$\frac{3}{5} - \frac{3}{10} =$$

How can I subtract $\frac{3}{10}$?



$$\frac{3}{5} = \frac{6}{10}$$

Find a common denominator.



$$\frac{6}{10} - \frac{3}{10} = \frac{3}{10}$$

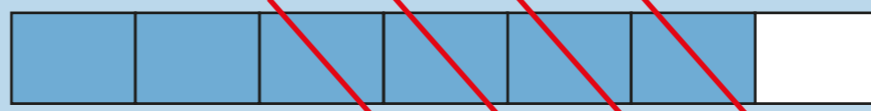
I can subtract fractions with the same denominator.

Year 5 Term 5



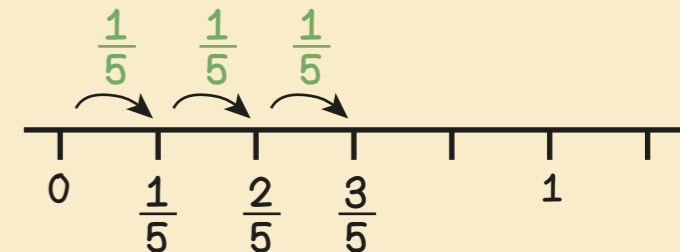
$$1\frac{6}{7} - \frac{4}{7} =$$

I can subtract fractions with the same denominator.



$$1\frac{6}{7} - \frac{4}{7} = 1\frac{2}{7}$$

$$\begin{aligned} \frac{1}{5} \times 3 &= \frac{1}{5} + \frac{1}{5} + \frac{1}{5} \\ &= \frac{3}{5} \end{aligned}$$



$$1\frac{1}{8} \times 3 =$$

$$1 \times 3$$

+

$$\frac{1}{8} \times 3$$

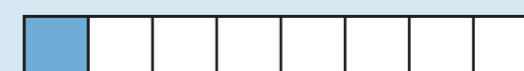


$$3 + \frac{3}{8}$$

$$1\frac{1}{8} \times 3 = 3\frac{3}{8}$$

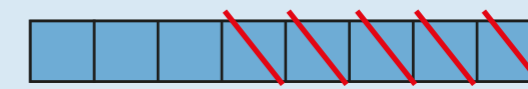
$$1\frac{1}{8} - \frac{3}{4} =$$

How can I subtract $\frac{3}{4}$?



$$\frac{3}{4} = \frac{6}{8}$$

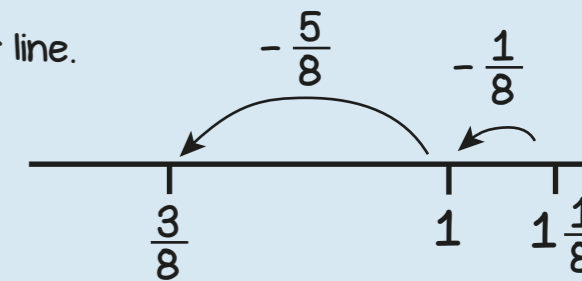
Find a common denominator.

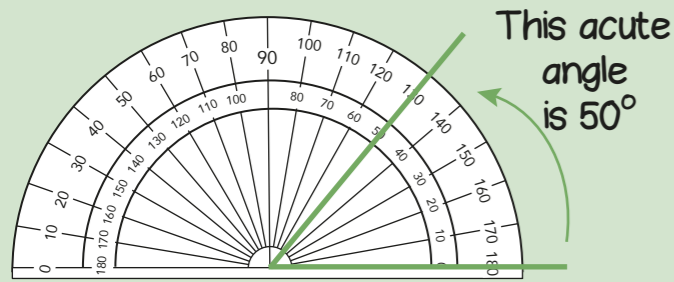


$$1\frac{1}{8} - \frac{6}{8} = \frac{3}{8}$$

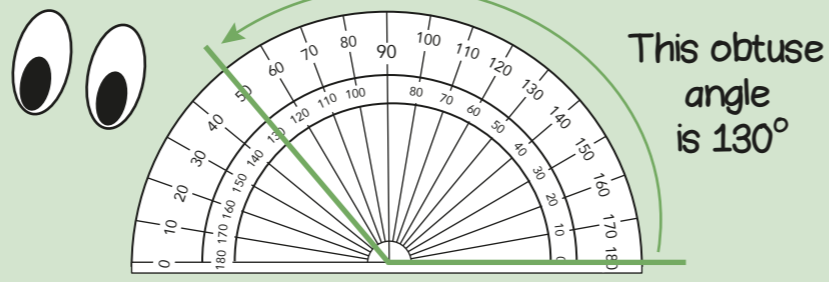


Or on a number line.





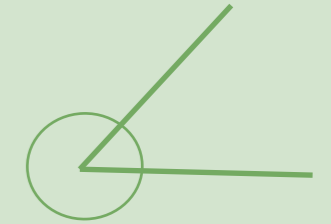
An acute angle is less than 90°



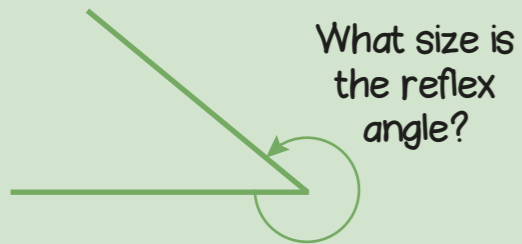
An obtuse angle is more than 90° and less than 180°



The sum of the angles at a point on a straight line is 180°



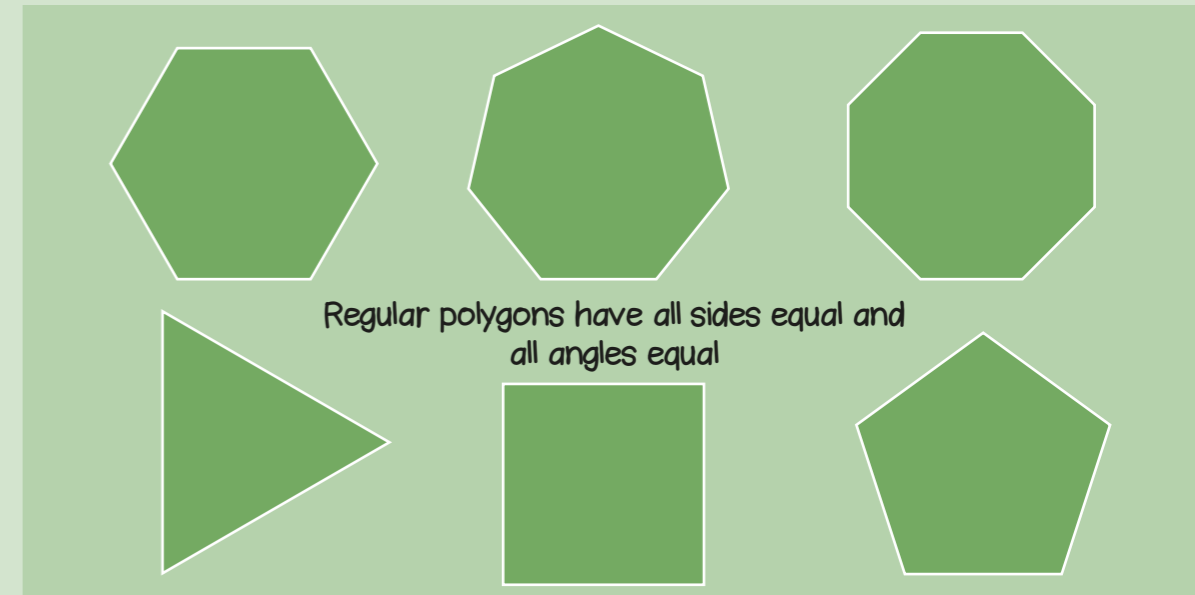
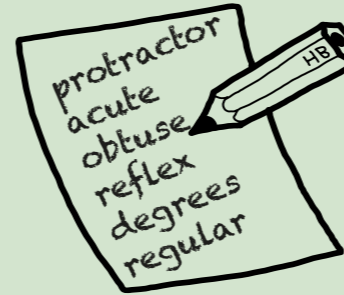
The sum of the angles at a point is 360°



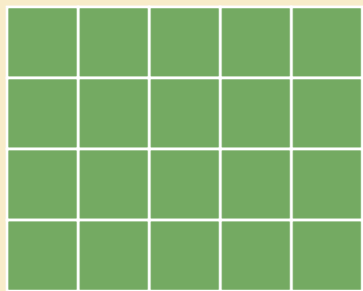
A reflex angle is more than 180° and less than 360°

The acute angle is 40°

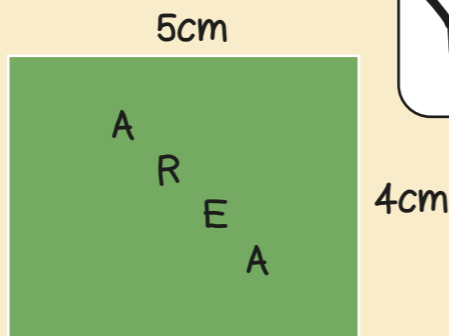
The reflex angle is $360^\circ - 40^\circ = 320^\circ$



Year 5 Term 6

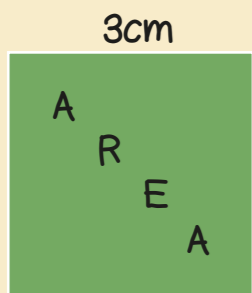


4 rows of 5 = 20 squares



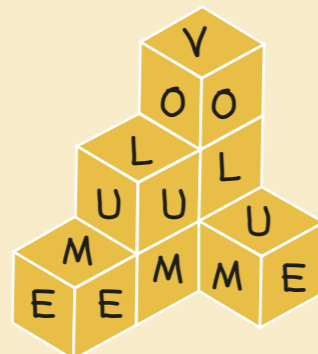
Area of rectangle = length x width
= 5×4
= 20cm^2

The area of a shape is the amount of space inside a shape

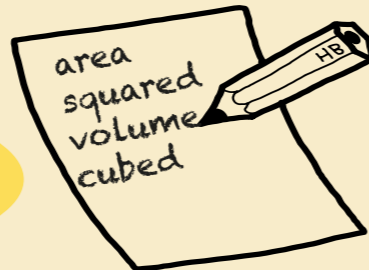


Area of the square = 3^2
= 3×3
= 9cm^2

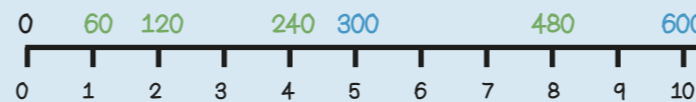
Volume is the amount of space a 3D shape takes up



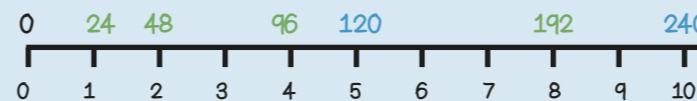
The volume is 7 cubes or 7cm^3



60 seconds = 1 minute
so 240 seconds = 4 minutes

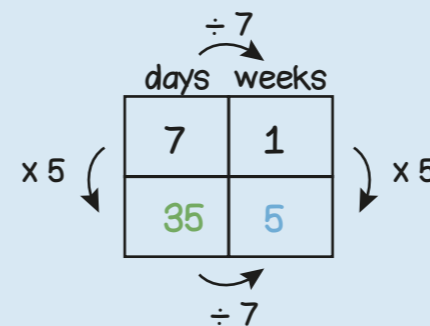


60 minutes = 1 hour
so 240 minutes = 4 hours



24 hours = 1 day
so 120 hours = 5 days

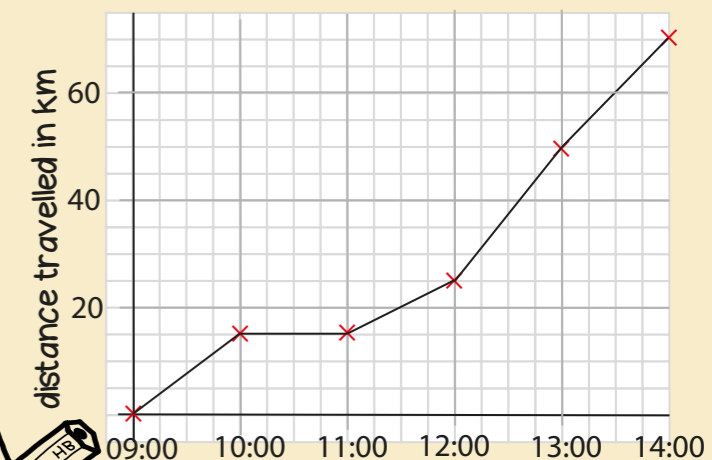
7 days = 1 week
35 days = 5 weeks



Bus timetable

| | | | |
|---------|-------|-------|-------|
| Ashley | 09:30 | 11:50 | 16:15 |
| Barton | 10:10 | 12:30 | 17:00 |
| Calford | 10:52 | 13:12 | 17:44 |
| Digley | 11:08 | 13:28 | 18:02 |

The 11:50 bus from Ashley takes 1 hour and 22 minutes to reach Calford



From 11a.m. to 1p.m. they travelled 35km

