

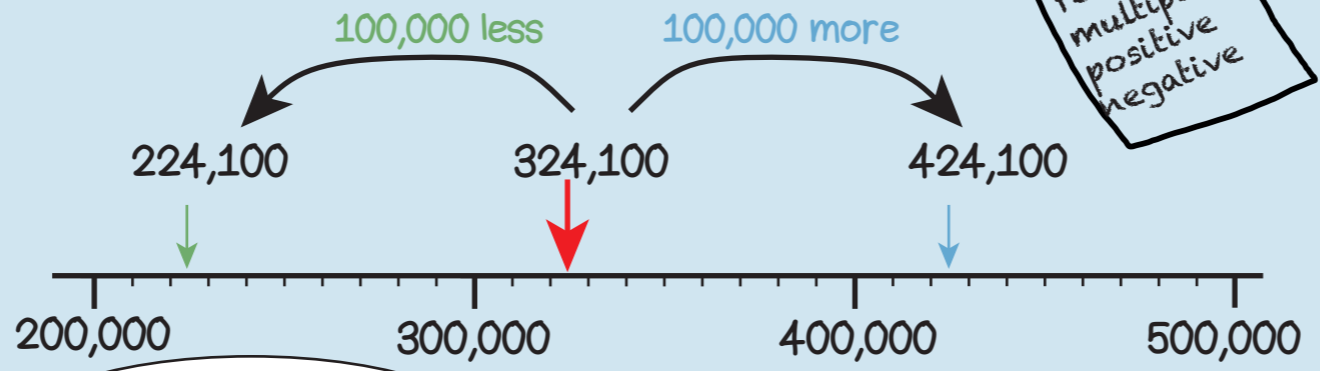
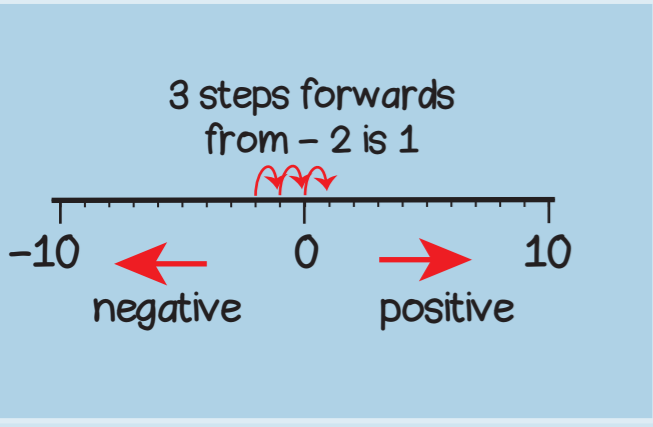
In order from smallest to largest

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

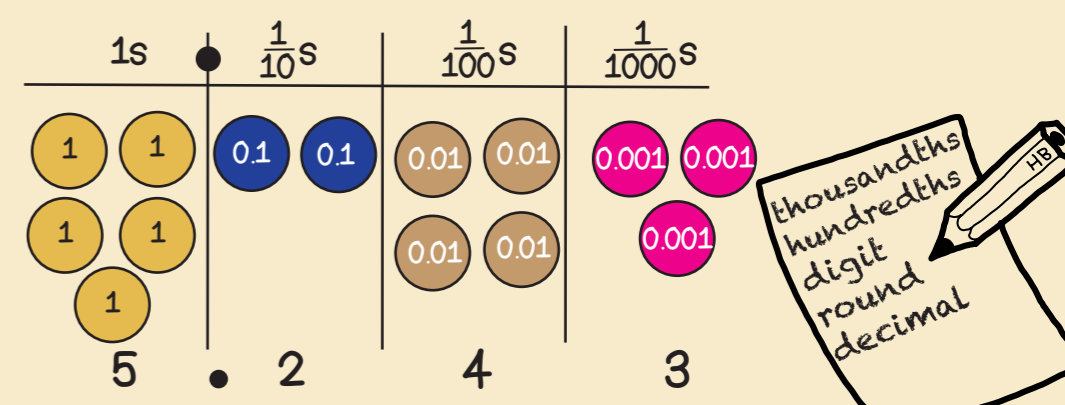


5 or more - round up
4 or less - round down

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

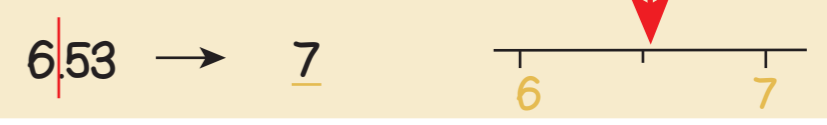
$2.345 > 2.343$ $2.455 > 2.343$ $2.3 > 2.299$

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

Round to the nearest tenth.

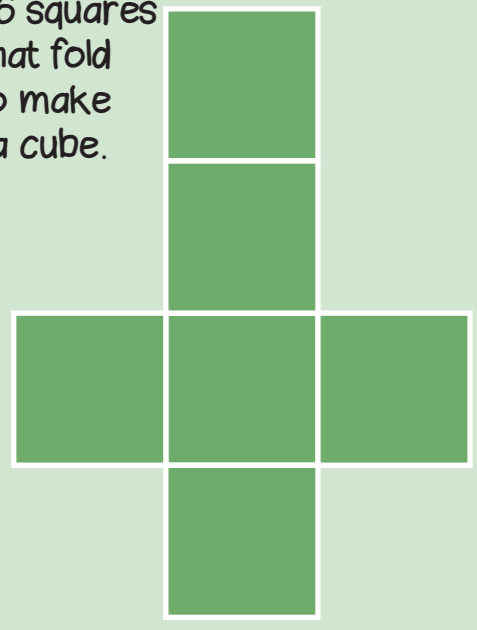


Round to the nearest whole number



Year 5 Term 1

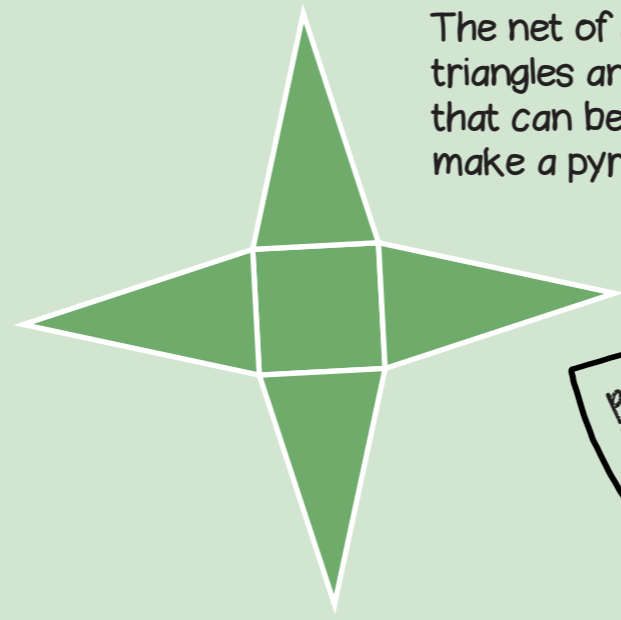
The net of a cube has 6 squares that fold to make a cube.



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

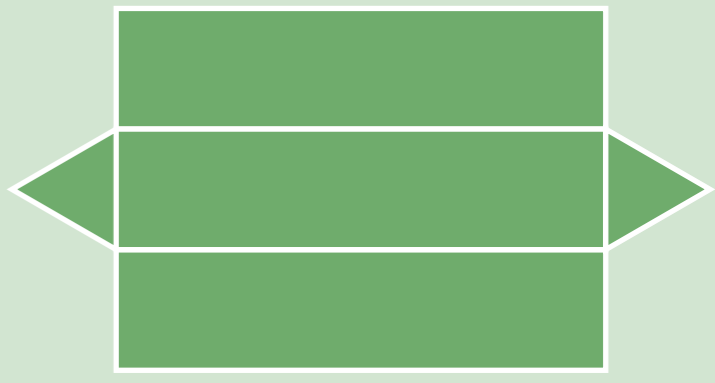


The net of a pyramid has triangles and a polygon that can be folded to make a pyramid.



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.

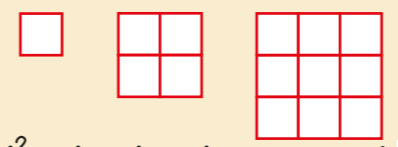
Each digit is ten times smaller.

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

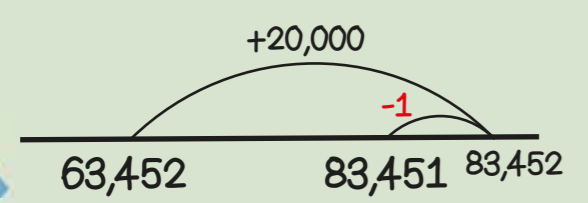
Year 5 Term 2



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
10,000 10,000			10	
10,000 10,000				

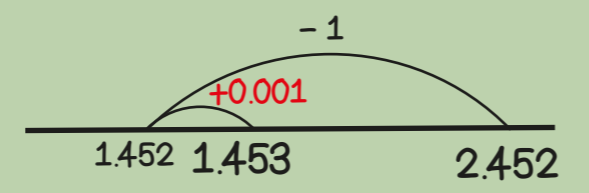
Add 20,000 then subtract 1



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
	0.1 0.1	0.01 0.01	
		0.01	0.001

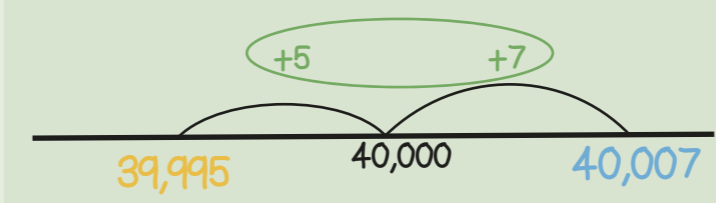
Take away 1 then add 1 thousandth



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



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



Written methods

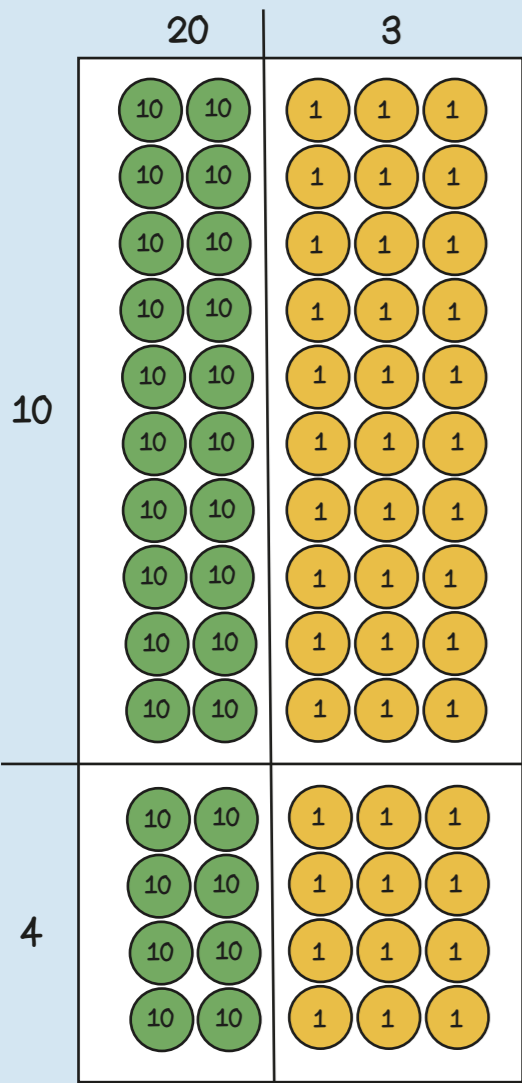
$$\begin{array}{r} 25,648 \\ + 42,524 \\ \hline 68,172 \end{array}$$

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

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?

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

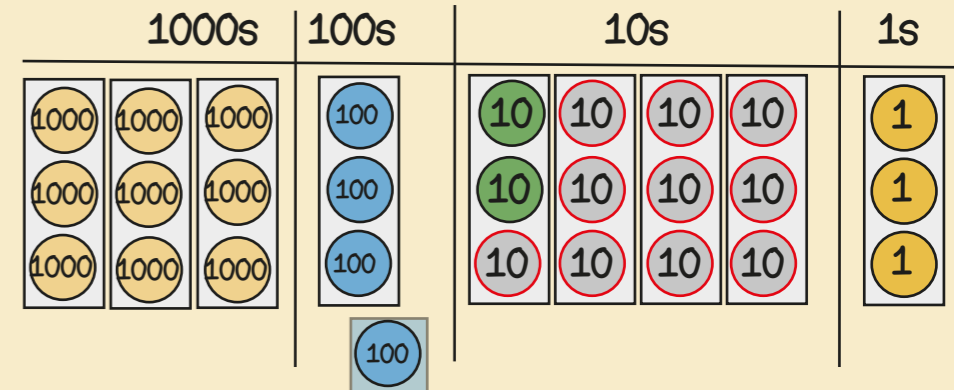
$$30 \times 99 = 30 \times 100 - 30 \times 1 = 3000 - 30 = 2970$$

$0.4 \times 7 = ?$
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...

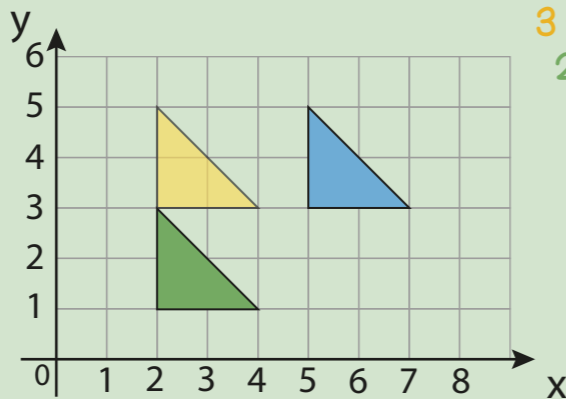
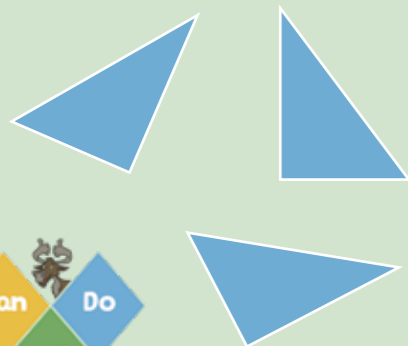
$$0576r1$$

$$6 \overline{) 3437}$$

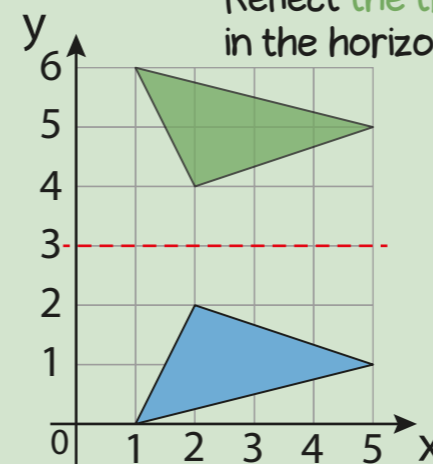
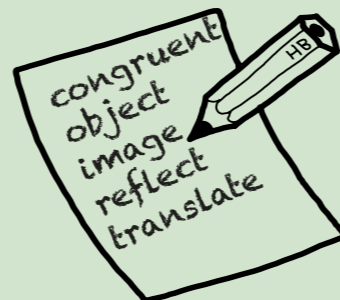
1	6
2	12
4	24
5	30
8	48
10	60

Year 5 Term 3

Congruent shapes are exactly the same shape and size.



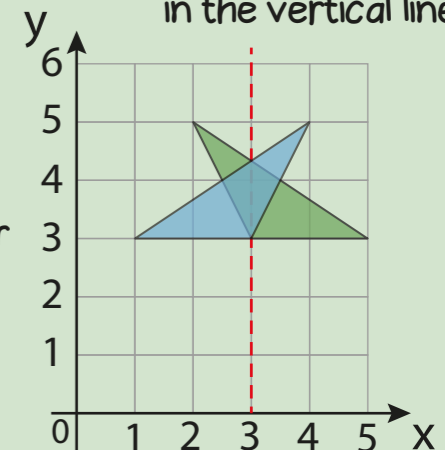
Translate the triangle 3 squares left and 2 squares down.



Reflect the triangle in the horizontal line.

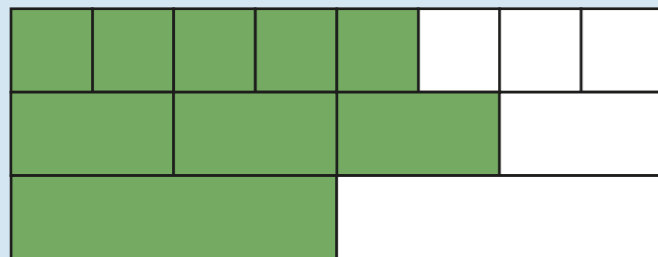
The image is the same distance from the mirror line as the object.

Reflect the triangle in the vertical line.



Use equivalence to compare

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



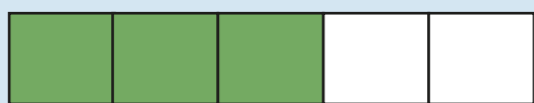
$$\frac{3}{4} = \frac{6}{8}$$

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

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



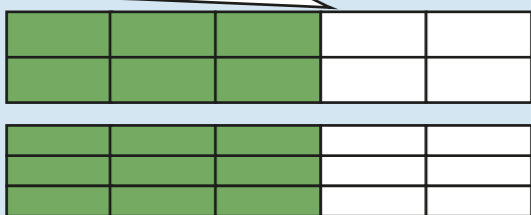
$$\frac{3}{5}$$



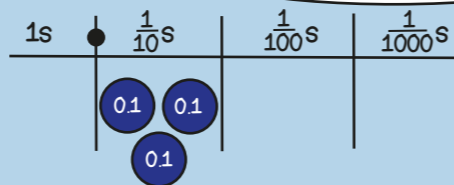
If there are 2 times as many equal parts, then there are 2 times as many shaded parts

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

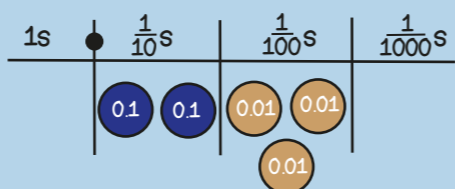
$$\frac{3}{5} = \frac{9}{15}$$



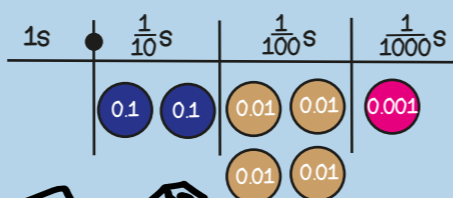
Decimals as fractions



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

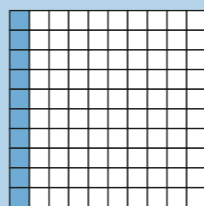


$$0.23 = \frac{23}{100}$$



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

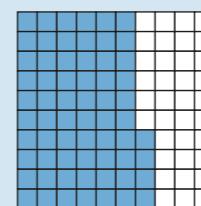
denominator
numerator
equivalence
thousandths
percentage



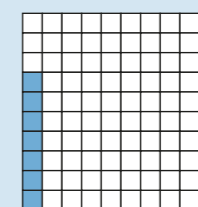
$$\frac{10}{100} = \frac{1}{10}$$

Percentage, decimal, fraction equivalence

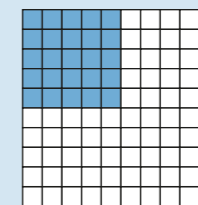
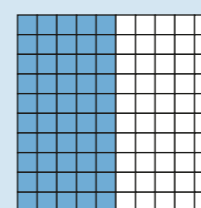
$$\frac{64}{100} = 0.64 = 64\%$$



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

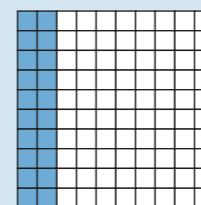


$$\frac{1}{2} = \frac{50}{100} = 0.5 = 50\%$$



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

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



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

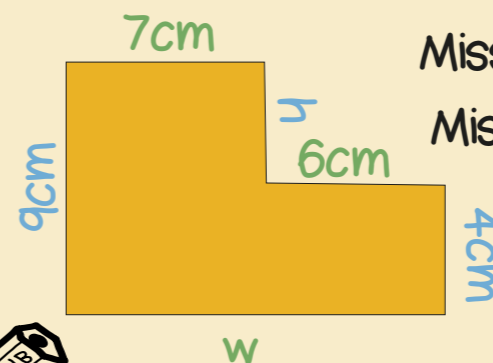
13.6×10
move digits 1 place left

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

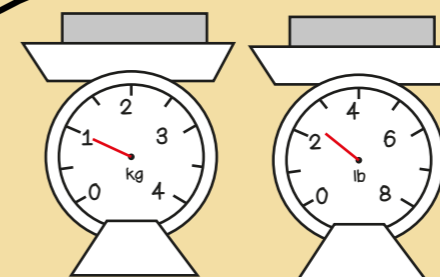
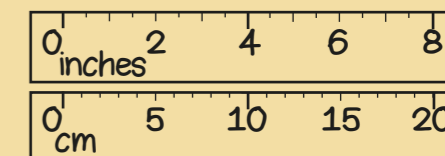


Missing width = $w = 7 + 6 = 13\text{cm}$

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

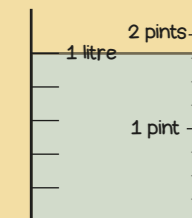
Perimeter
= $9 + 7 + h + 6 + 4 + w$
= 44cm

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



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

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



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 $13.6\text{m} = 1360\text{cm}$

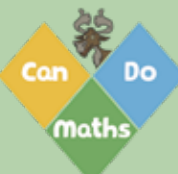
$1\text{km} = 1000 \text{ m}$
 $13.6 \times 1000 = 13600$
so $13.6\text{km} = 13,600\text{m}$

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

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

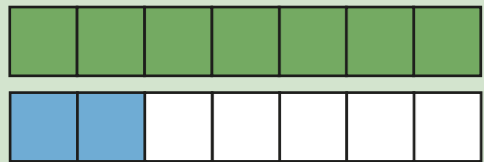
When converting from a larger unit to a smaller unit, multiply because there will be more of them.

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



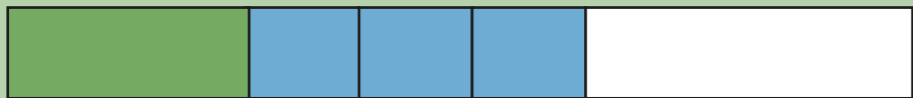
$$\frac{9}{7} = 1\frac{2}{7}$$

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



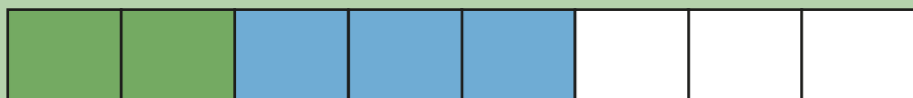
$$\frac{1}{4} + \frac{3}{8} =$$

I can't describe the sum!



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

Find a common denominator.

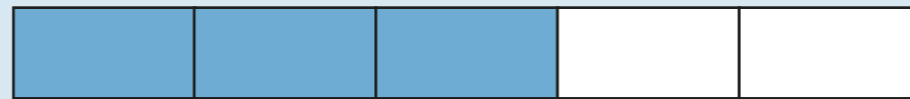


$$\frac{2}{8} + \frac{3}{8} = \frac{5}{8}$$

I can add fractions with the same denominator.

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

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



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

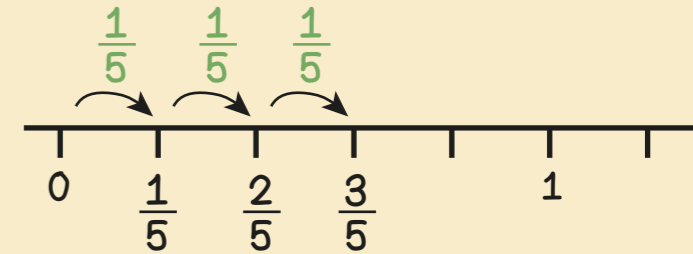
Find a common denominator.



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

I can subtract fractions with the same denominator.

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

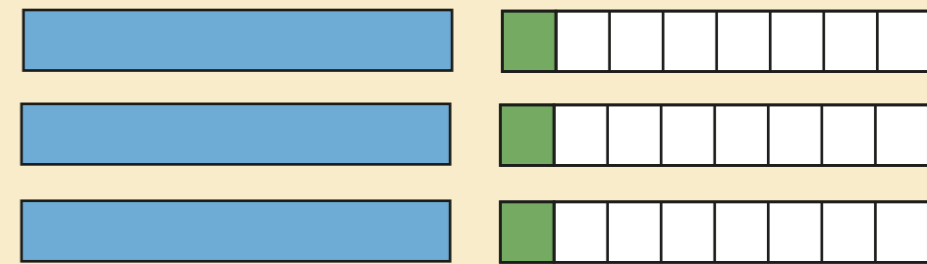


$$1\frac{1}{8} \times 3 =$$

$$1 \times 3$$

+

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



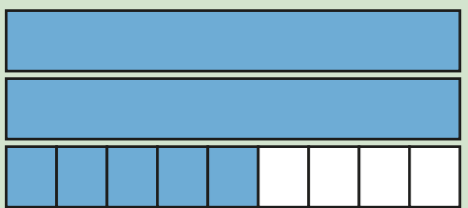
$$3 + \frac{3}{8}$$

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

Year 5 Term 5

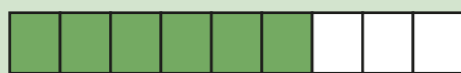


$$2\frac{5}{9} + \frac{2}{3} =$$



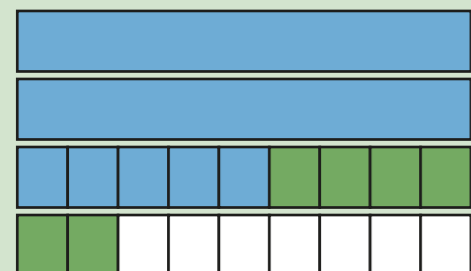
Add the fractions by finding a common denominator.

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



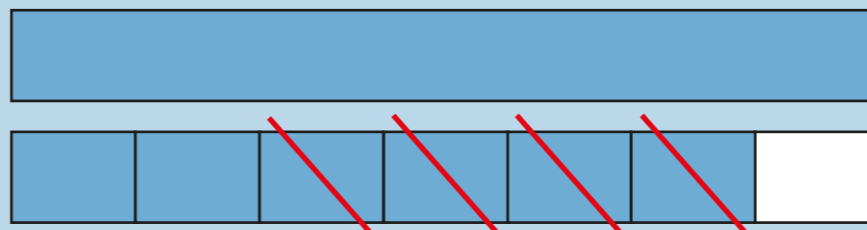
$$2\frac{5}{9} + \frac{6}{9} = 2\frac{11}{9}$$

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



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

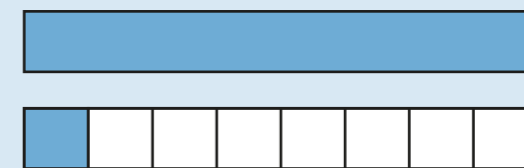
I can subtract fractions with the same denominator.



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

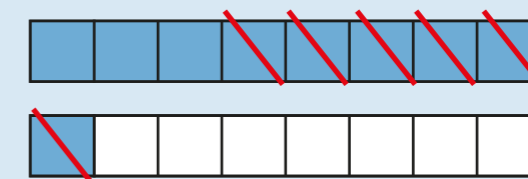
$$1\frac{1}{8} - \frac{3}{4} =$$

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



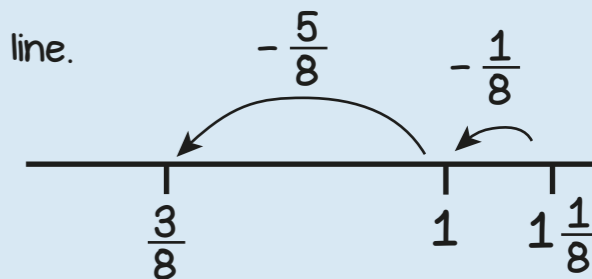
$$\frac{3}{4} = \frac{6}{8}$$

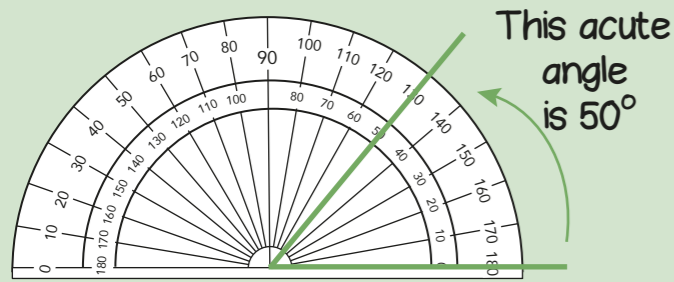
Find a common denominator.



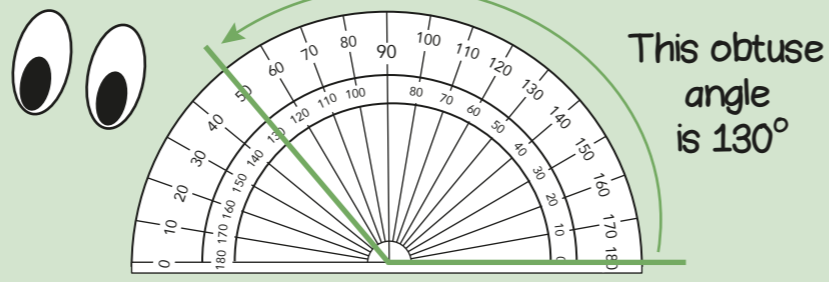
$$1\frac{1}{8} - \frac{6}{8} = \frac{3}{8}$$

Or on a number line.





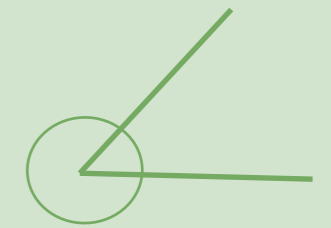
An acute angle is less than 90°



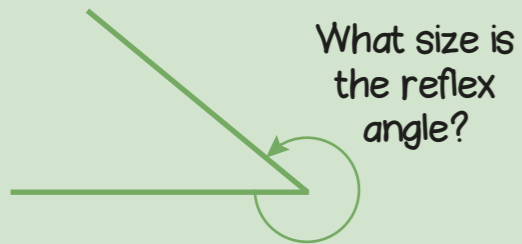
An obtuse angle is more than 90° and less than 180°



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



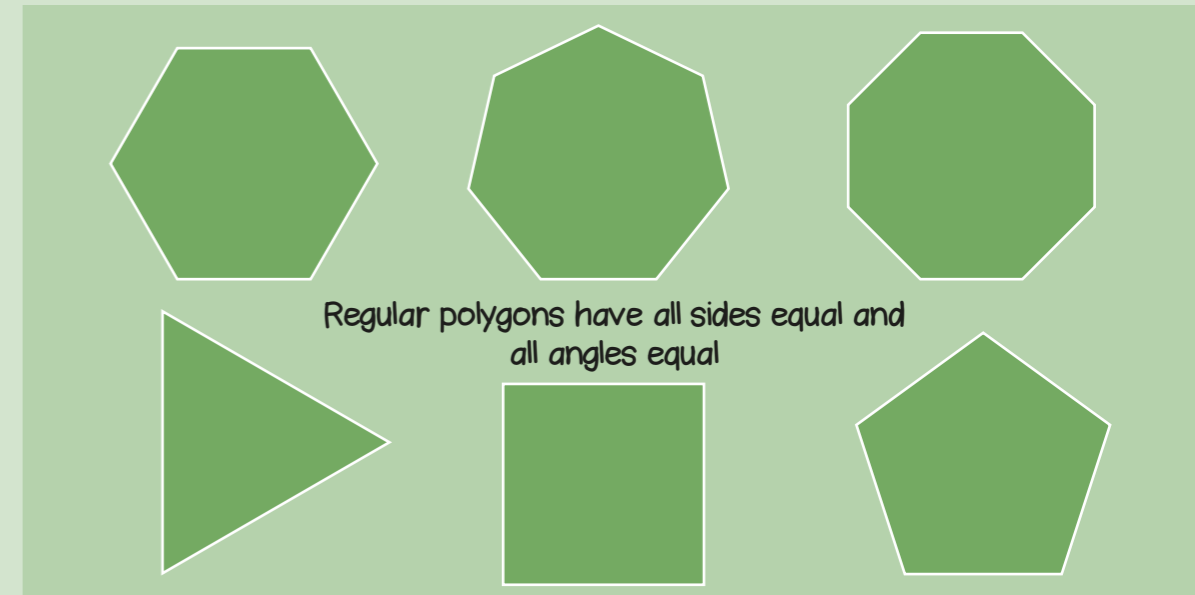
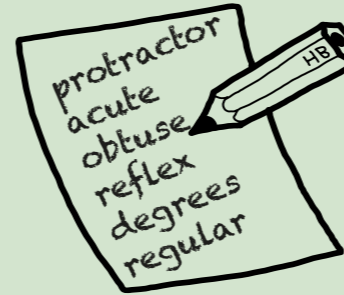
The sum of the angles at a point is 360°



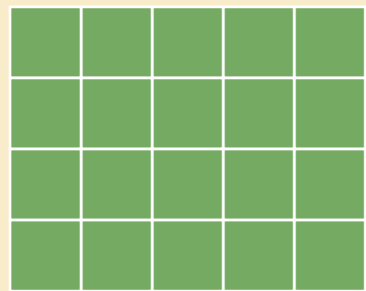
A reflex angle is more than 180° and less than 360°

The acute angle is 40°

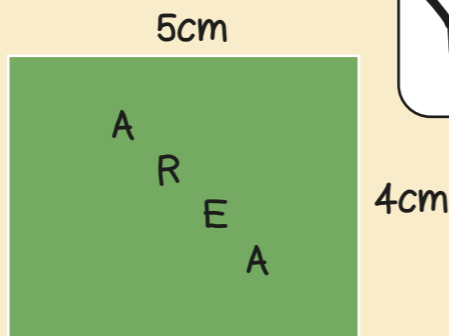
The reflex angle is $360^\circ - 40^\circ = 320^\circ$



Year 5 Term 6

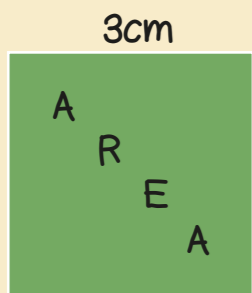


4 rows of 5 = 20 squares



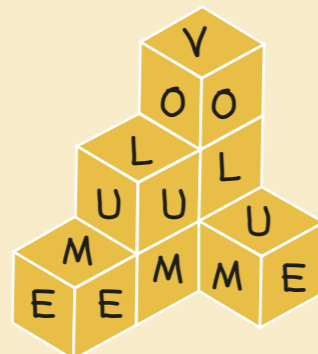
Area of rectangle = length x width
= 5×4
= 20cm^2

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

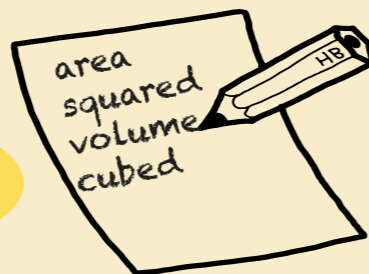


Area of the square = 3^2
= 3×3
= 9cm^2

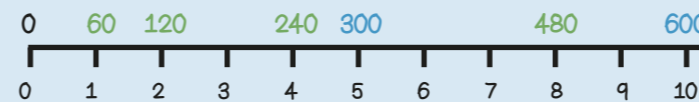
Volume is the amount of space a 3D shape takes up



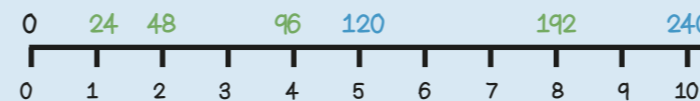
The volume is 7 cubes or 7cm^3



60 seconds = 1 minute
so 240 seconds = 4 minutes

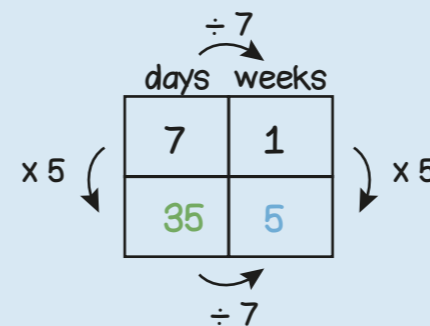


60 minutes = 1 hour
so 240 minutes = 4 hours



24 hours = 1 day
so 120 hours = 5 days

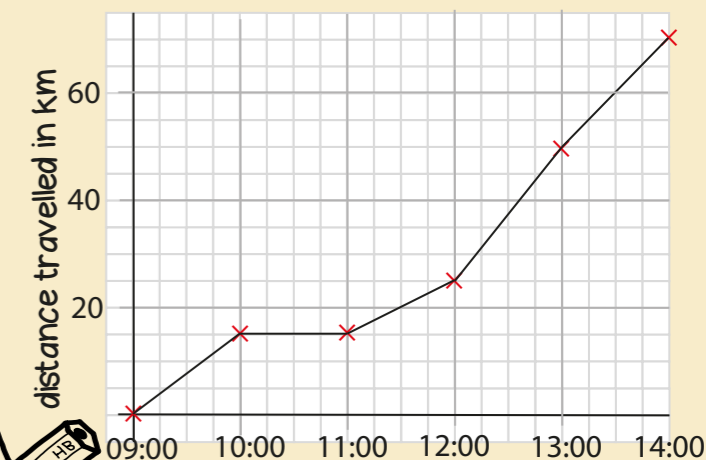
7 days = 1 week
35 days = 5 weeks



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

