

YEAR 6 RATIO & PROPORTION

$$3:4$$

4 video tutorials

9 worksheets

20 past SATs question examples

All answers included



Aligned to the National Curriculum

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Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts

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Enlarge **p7**

Reduce **p12**

Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.

Part 1: fractions and % **p16**

Part 2: knowledge of multiples **p17**

Click the icon on each worksheet to open the relevant video tutorial



Other titles that cover the whole of the Year 6 National Curriculum are available.

Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts

Write each fraction as a ratio:



Fraction of blue paint in purple mixture



Ratio of blue paint to red paint

$\frac{1}{5}$
$\frac{3}{4}$
$\frac{1}{7}$
$\frac{2}{6}$

Write the fraction as a ratio

:
:
:
:

Fraction of squash mix in a drink



Ratio of squash to water

$\frac{1}{8}$
$\frac{3}{10}$
$\frac{2}{9}$
$\frac{3}{15}$

Write the fraction as a ratio

:
:
:
:

Fill in the missing values to keep the ratio the same:

3 : 5
: 30
30 :
: 45
21 :

2 : 7
: 42
42 :
: 63
24 :

3 : 8
: 24
24 :
: 56
27 :

Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts

Answer the following questions

1: The ratio of children to adults is 5:3



How many adults are there in a group of 64 people?

How many children are there in a group of 24 people?

There are 25 children. How many people are there altogether?

2: The ratio of brown eyes to blue eyes is 15:1

How many people with brown eyes are there if there are 96 people?

How many people with blue eyes are there in a group of 48 people?

There are 7 people with blue eyes . How many people with brown eyes are there?

3: The ratio of lions to monkeys in a zoo is 1:4



How many monkeys are there if there are 7 lions?

How many lions are there if there are 45 lions and monkeys altogether?

How many lions and monkeys are there altogether if there are 60 monkeys?

4: The ratio of pencils to rulers to rubbers is 4:2:1



How many rubbers are there if there are 32 pencils?

How many pencils are there if there are 20 rulers?

How many of each item are there if there are 49 items altogether?

Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts



Fill in the correct measurements of the missing ingredients ensuring that you stick to the original ratio.

5 red sweets	4 blue sweets	2 yellow sweets	3 green sweets
			27
		24	
30			
	12		

Lean Green Juice
Serves 2

3 green apples
30 ml lemon juice
25g kale leaves
2 sticks of celery
40 g cucumber
10g chia seeds
200 ml coconut water
100 ml of water
4 mint leaves

Use the recipe to answer the questions.

- How many apples are needed for a recipe that serves 1 person?
- If 50g kale leaves were used, how much water is needed?
- If 5g chia seeds is used, how much lemon juice is needed?
- How many mint leaves and sticks of celery are needed for a recipe that serves 18 people?

Solve problems involving the calculation of percentages



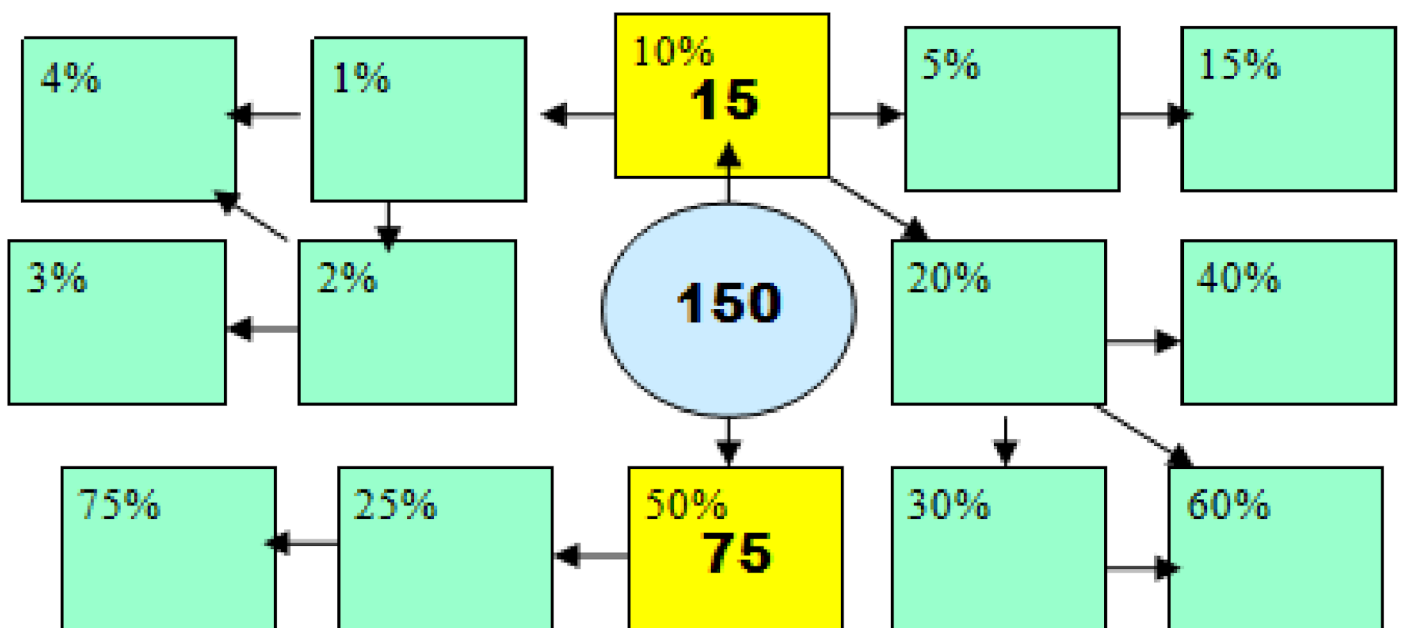
Place A - F in order from smallest value to largest

A	B	C	D	E	F
10% of 1560	25% of 600	20% of 800	75% of 180	50% of 340	90% of 200

--	--	--	--	--	--

smallest
→
 biggest

Use 10% and 50% to help find the other percentages then answer the questions



2a) Find 80% of 150

2b) Find 35% of 150

2c) Find 22% of 150

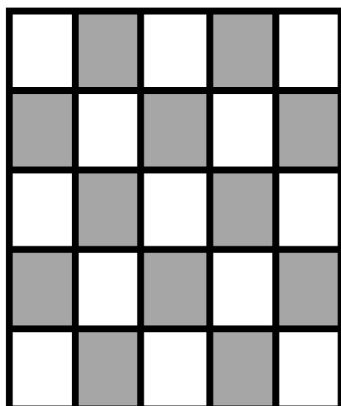
2d) Find 99% of 150

2e) Find 11% of 150

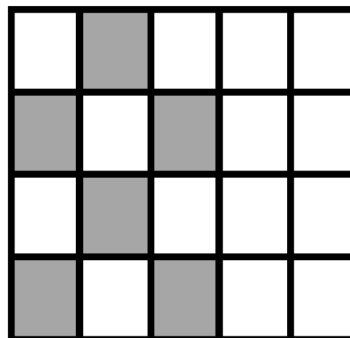
2f) Find 39% of 150

Solve problems involving the calculation of percentages

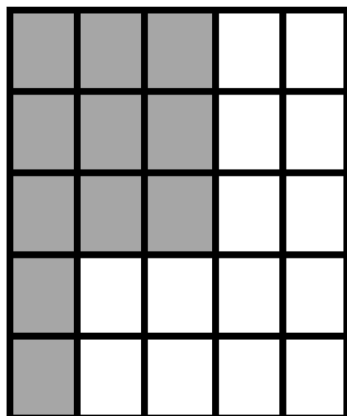
Write the percentage of the shaded part of each shape



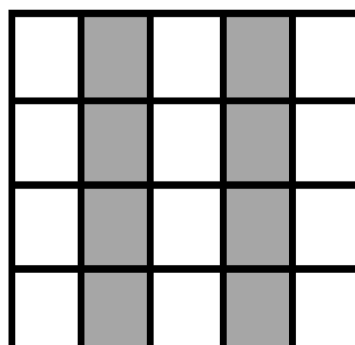
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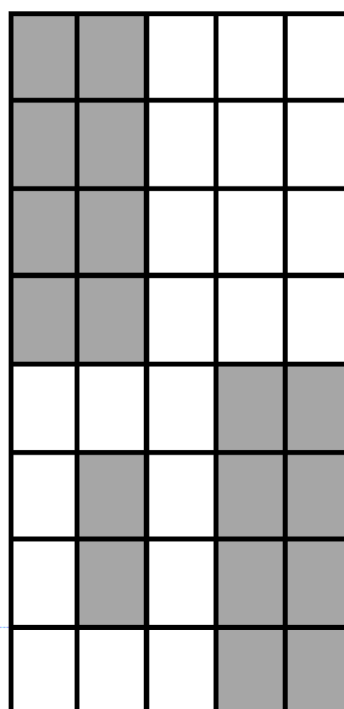
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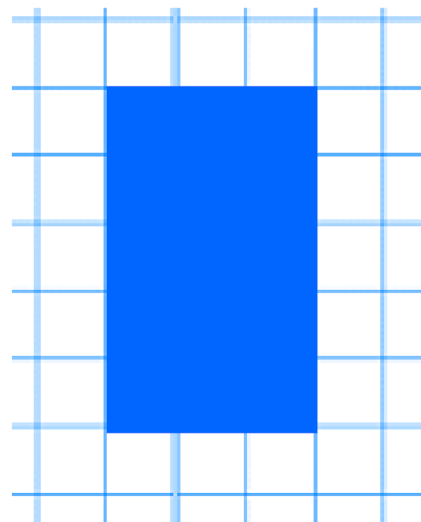
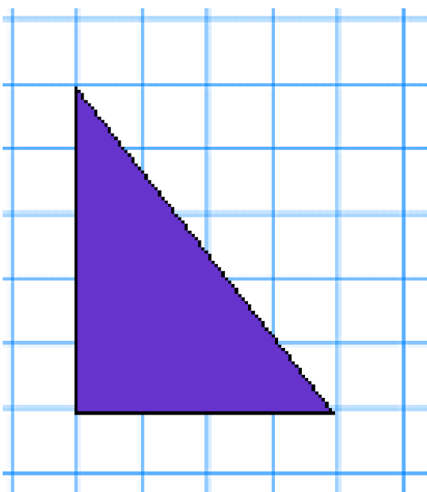
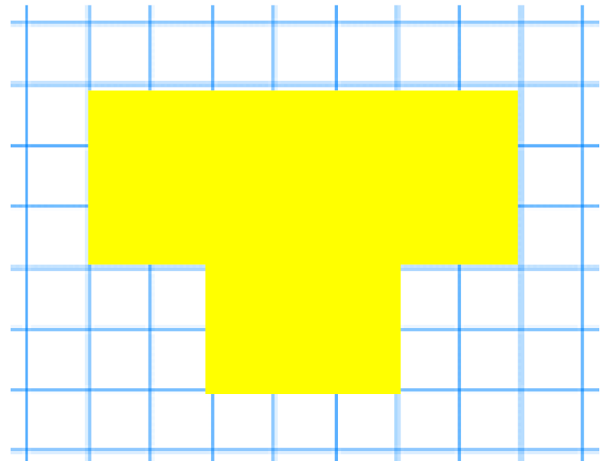
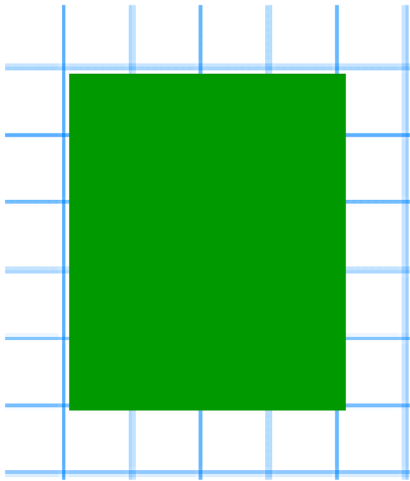
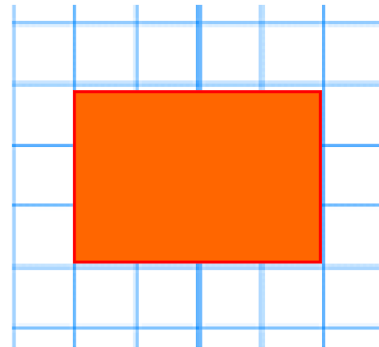
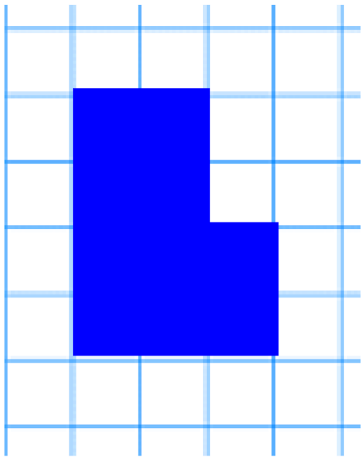
%



%

Solve problems involving similar shapes where the scale factor is known or can be found

Enlarge each shape by scale factor by 3. Square paper on next page



Solve problems involving similar shapes where the scale factor is known or can be found



Solve problems involving similar shapes where the scale factor is known or can be found



Solve problems involving similar shapes where the scale factor is known or can be found



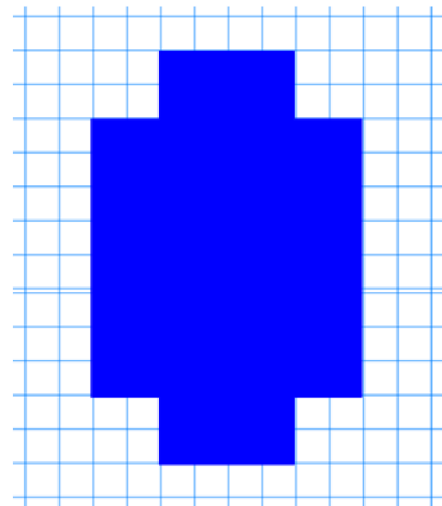
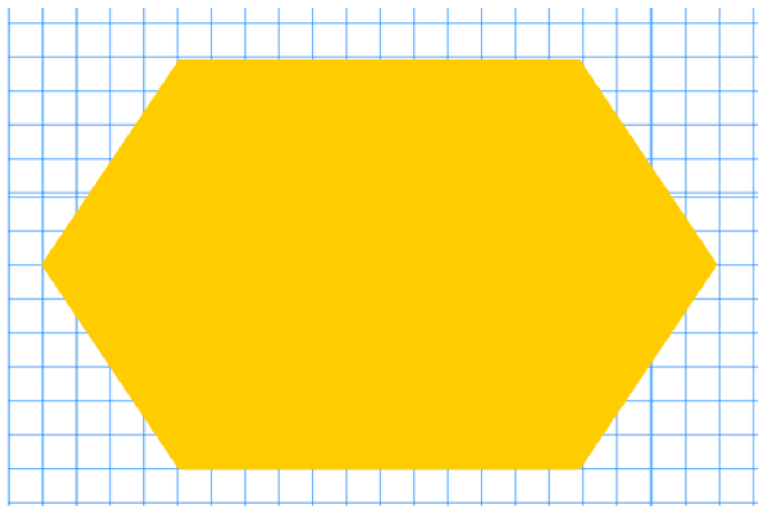
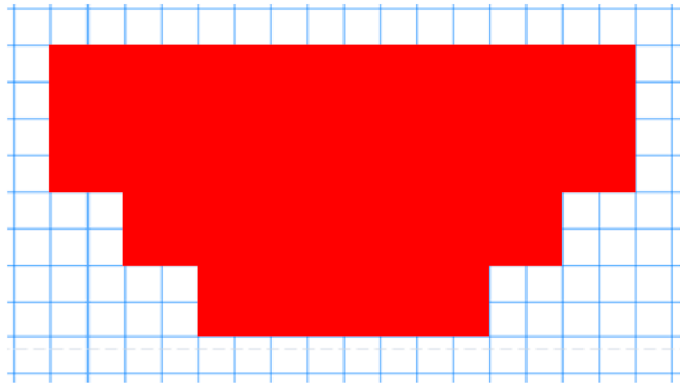
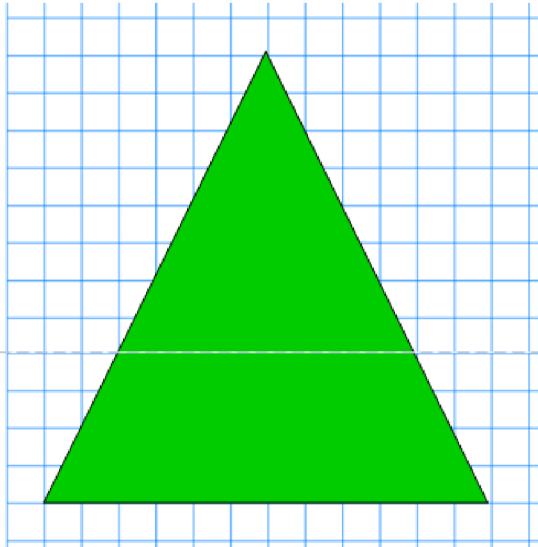
Solve problems involving similar shapes where the scale factor is known or can be found



Solve problems involving similar shapes where the scale factor is known or can be found

Reduce each shape by scale factor by 4

Use the squared paper on the next page



Solve problems involving similar shapes where the scale factor is known or can be found

Solve problems involving similar shapes where the scale factor is known or can be found



Solve problems involving similar shapes where the scale factor is known or can be found

Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples

Answer the following questions

1. Jason swam 350metres across a lake. He has $\frac{3}{5}$ of the lake left to swim.

- a) How many metres are left to swim?
- b) What is the total distance he will swim?



2. Melina read 20% of a book on Monday. She read twice that amount on Tuesday. She has 200 pages left to read on Wednesday.

- a) How many pages did she read on Tuesday?
- b) How many pages were in the book?



3. Jasmine walked $\frac{1}{3}$ of a journey before lunch. After lunch she completed the remaining 9km.

- a) How far did she walk before lunch?
- b) How long was the complete journey?



4. Harry has 36 stickers in his sticker book. His book is 75% complete.

- a) How many stickers does he need to collect?
- b) How many stickers does the sticker book hold?



5. Aidan planted some seeds. 60% of the seeds grew. The remaining 12 didn't grow.

- a) How many seeds did he plant?
- b) How many seeds grew?



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Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples

Answer the following questions

1. Mariam sent some invitations out to a fundraising coffee morning. For every 5 invites she sent, 3 people said they could come. Altogether 42 people attended. **How many invites did she send?**



2. A bag of sugar weighs 5 times more than a box of tea bags. Together they weigh 1.8kg. **How much does the sugar weigh?**



3. Isabel hid some Easter eggs. For every 4 she hid, 3 were found. Altogether 21 were found. **How many did she hide?**

4. Together a cat and a dog weigh 25kg. The dog weighs 4 times more than the cat. **How much does the cat weigh?**

5.. Lisa is twice Andy's age. Andy is twice Surinder's age. Altogether their ages total 63. **How old is Andy?**



6.. Julian flipped some pancakes. For every 3 he flipped he caught 2. He caught 14 altogether.

How many did he fail to catch?

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