

# Maths Mastery

## Ratio: Solve Problems Including Percentages

### Challenge Cards



#### Maths Mastery - Ratio: Solve Problems Including Percentages

Write an explanation of how to calculate 37% of 240.

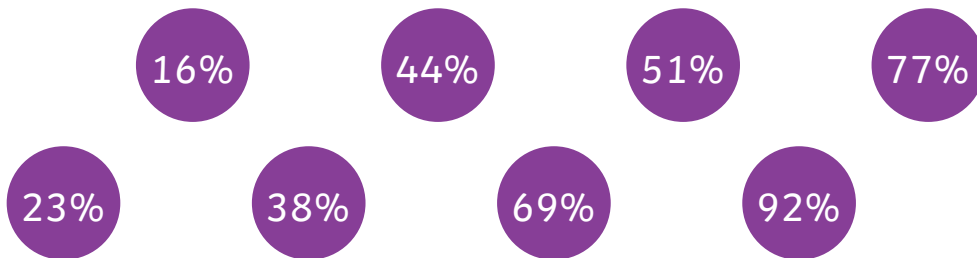
(Share your explanation with a partner.)



What is the same and what is different about your explanations? Can you improve your explanation?

#### Maths Mastery - Ratio: Solve Problems Including Percentages

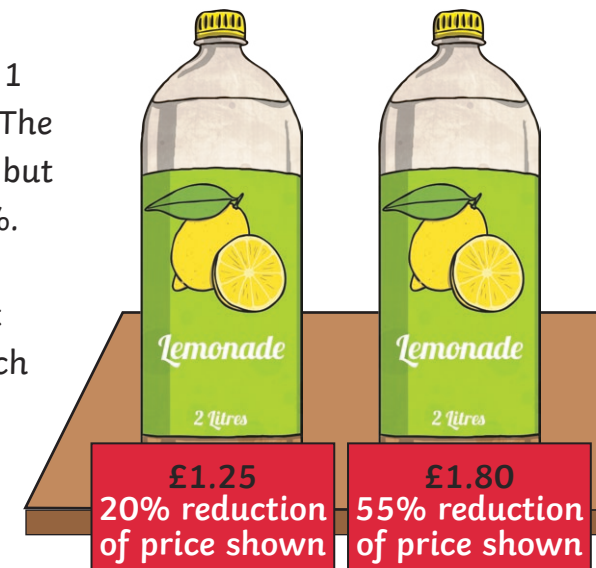
Explain which combinations of percentages you would use to find these:



Share and compare your ideas with a partner or in a group.  
Do you prefer using any of the other ideas in the group?

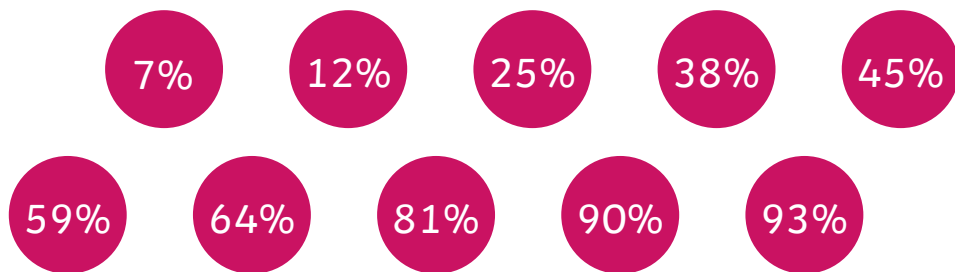
#### Maths Mastery - Ratio: Solve Problems Including Percentages

A shop sells two different 1 litre bottles of lemonade. The full price of one is £1.25, but there is a discount of 20%. The full price of the other £1.80 but is being sold at 55% of its full price. Which bottle is cheaper?



Maths Mastery - Ratio: Solve Problems Including Percentages

Calculate the following percentages of  $360^\circ$ .



Share your ideas with a partner or in a group. Where you have different answers, discuss how you found your answer. Which answer do you think is correct?

Maths Mastery - Ratio: Solve Problems Including Percentages

Complete the table and draw a pie chart with the following percentages:

Colour	Percentage	Required Angle
Blue	23%	
Yellow	12%	
Green	26%	
Red	31%	
Orange	8%	

Share your ideas with a partner or in a group. Where you have different answers, do you prefer any from others in the group?

# Maths Mastery Answers

## Ratio: Solve Problems Including Percentages Challenge Cards

### Card 1

Calculate 10% of 240 = 24

Calculate 5% of 240 = 12

Calculate 1% of 240 = 2.4

$37\% = 10\% \times 3 + 5\% + 1\% \times 2$

$37\% \text{ of } 240 = 24 \times 3 + 12 + 2.4 \times 2$   
 $= 72 + 12 + 4.8$   
 $= 88.8$

Other ways are possible.

### Card 2

16% - 10% + 5% + 1%

23% - 10%  $\times$  2 + 1%  $\times$  3

44% - 10%  $\times$  4 + 1%  $\times$  4

38% - 10%  $\times$  3 + 1%  $\times$  8

51% - 50% + 1%

69% - 10%  $\times$  7 - 1%

77% - 25%  $\times$  3 + 1%  $\times$  2

92% - 100% - 10% + 1%  $\times$  2

Other answers are possible.

### Card 3

£1.25 sold for 80% = £1

£1.80 sold for 55% = 99p

The second bottle is cheaper.

### Card 4

7%    25.2°            59%    212.4°

12%    43.2°            64%    230.4°

25%    90°                81%    291.6°

38%    136.8°            90%    324°

45%    162°                93%    334.8°

### Card 5

