

# Working out Percentages

## Exercise One

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Could you work out how much money you would save in a "20 per cent off" sale or what a ten per cent tip is? Percentages can be hard to understand. This exercise will help by showing you how to work out percentages and avoid being ripped off.

### Percentage Tables

	£10	£20	£30	£40	£50	£60	£70	£80	£90	£100
<b>5%</b>	50p	£1	£1.50	£2	£2.50	£3	£3.50	£4	£4.50	£5
<b>10%</b>	£1	£2	£3	£4	£5	£6	£7	£8	£9	£10
<b>15%</b>	£1.50	£3	£4.50	£6	£7.50	£9	£10.50	£12	£13.50	£15
<b>20%</b>	£2	£4	£6	£8	£10	£12	£14	£16	£18	£20
<b>25%</b>	£2.50	£5	£7.50	£10	£12.50	£15	£17.50	£20	£22.50	£25
<b>30%</b>	£3	£6	£9	£12	£15	£18	£21	£24	£27	£30
<b>40%</b>	£4	£8	£12	£16	£20	£24	£28	£32	£36	£40
<b>50%</b>	£5	£10	£15	£20	£25	£30	£35	£40	£45	£50

### Questions

- How much money would you give in tips?
  - 10 per cent to the waiter for a £80 meal =
  - 10 per cent for the taxi driver for a £20 fare =
  - 15 per cent to the hair dresser for a £60 cut and colour =
- How much would you pay for the following items on sale?
  - 40 per cent off a jacket priced £70 =
  - 25 per cent off a top priced £30 =
- Compare the 10 per cent row to the 20 per cent and 30 per cent rows. What number patterns do you notice?

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## Support Materials for Exercise One

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### Support Materials

Here are some quick tips to help you work out percentages when you are out and about in the shops. You can use two methods.

#### Example

A restaurant bill comes to £88.71 and you want to leave a 10 per cent tip.


#### Method One

To find 10 per cent, divide by 10:

$$£88.71 \div 10 = £8.87$$

#### Method Two

To find 10 per cent, move the decimal point one place to the left:

£88.71  


£8.87

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## Answers to Exercise One

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1. How much money would you give in tips?

A. 10 per cent to the waiter for a £80 meal.

£8

B. 10 per cent for the taxi driver for a £20 fare.

£2

C. 15 per cent to the hair dresser for a £60 cut and colour.

£9

2. How much would you pay for the following items on sale?

A. 40 per cent off a jacket priced £70

£42

B. 25 per cent off a top priced £30

£22.50

3. To get 10 per cent divide by 10. For 20 per cent divide by 10 and multiply by 2. For 30 per cent you divide by 10 and multiply by 3.

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## Exercise Two

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If your electricity bill went up by 20 per cent would you know how to work out how much extra you would have to pay? Over the past year, many household bills like gas and electricity have increased and this has put a strain on the household budget. This exercise will help you to understand how to work out percentage increases and plan household spending.

**Work out the following bills. Use the Support Materials to help you.**

1. 40 per cent increase in a £500 bill =
2. 20 per cent increase in a £400 bill =
3. 30 per cent increase in a £200 bill =
4. 50 per cent increase in a £1000 bill =
5. 15 per cent increase in a £300 bill =

### Example

20 per cent increase in a £300 bill

<b>Step One</b> Find 10 per cent of the bill. Divide bill amount by 10.	$\boxed{\text{£}300} \div 10 = \boxed{\text{£}30}$
<b>Step Two</b> £30 is 10% of the bill. To get 20% multiply by 2. (20% is twice 10%)	$\boxed{\text{£}30} \times \boxed{2} = \boxed{\text{£}60}$
<b>Step Three</b> Add the original bill amount and the bill increase together.	$\boxed{\text{£}300} + \boxed{\text{£}60} = \boxed{\text{£}360}$

# Working out Percentages

## Support Materials for Exercise Two

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### Quick Guide to Percentages

Percentage	Example: £60.00 bill	What to do
10%	$£60 \div 10 = £6$ or $£6.00$	$\div$ by 10 or  Move the decimal point one place to the left.
5%	$£6 \div 2 = £3$	Find 10% then halve it.
15%	$£6 + £3 = £9$	Find 10% then find 5%. Add the two together.
20%	$£6 \times 2 = £12$	Find 10% $\times 2$
30%	$£6 \times 3 = £18$	Find 10% $\times 3$
40%	$£6 \times 4 = £24$	Find 10% $\times 4$
50%	$£60 \div 2 = £30$	Find half of £60
75%	$£60 \div 2 = £30$ $£30 \div 2 = £15$ $£30 + £15 = £45$	Find 50% then find 25% (half again). Add them together.

# Working out Percentages

## Answers to Exercise Two

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1. 40 per cent increase in a £500 bill

£700

2. 20 per cent increase in a £400 bill

£480

3. 30 per cent increase in a £200 bill

£260

4. 50 per cent increase in a £1000 bill

£1500

5. 15 per cent increase in a £300 bill

£345