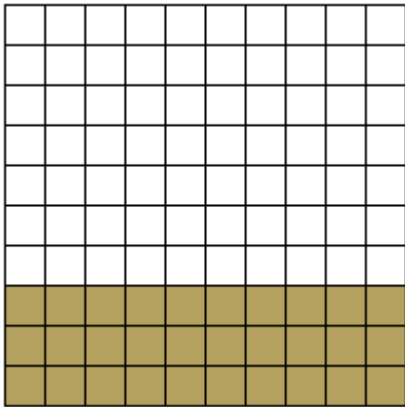


Percentages - quiz

Level A

1. What percentage of this grid of squares is shaded?

(There are 100 squares in this 10×10 grid.)



- A) 30%
B) 70%
2. Which is the smaller percentage?
A) 20%
B) 25%
3. Approximately 80% of households own a computer. What percentage don't own a computer?
A) 80%
B) 20%
C) 100%
4. Which is the better wage increase?
A) 10% of £120
B) 5% of £120
5. 50% of £80 is £50.
A) True
B) False

Percentages - quiz

6. If you increase £30 by 10% you get:

- A) £3
- B) £27
- C) £33

7. If you decrease £80 by 25% you get:

- A) £20
- B) £100
- C) £60
- D) 55

8. To find the cost of this shirt after the sale discount, you would do a percentage increase.



- A) True
- B) False

9. The sale price for the shirt above is:

- A) £5
- B) £10
- C) £15
- D) £20

10. Look at the headlines on this newspaper. To find out how much extra you will pay you would do a percentage increase.



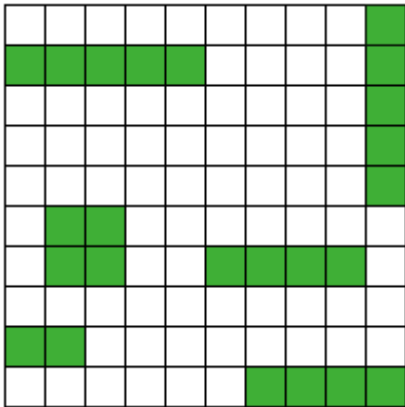
- A) True
- B) False

Percentages - quiz

Level B

1. What percentage of this grid is shaded?

(There are 100 small squares in this 10 × 10 grid.)



- A) 23%
- B) 24%
- C) 25%

2. Choose the set of percentages that is in the correct order of size.

- A) 12%, 21%, 23%, 32%, 31%, 33%
- B) 12%, 23%, 22%, 31%, 32%, 33%
- C) 12%, 21%, 22%, 31%, 32%, 33%

3. If 90% of garden waste can't be recycled this means that 20% can be recycled.

- A) True
- B) False

4. Cocoa powder contains 20% protein, 40% carbohydrate and the rest is fat. What percentage is the fat?

- A) 60%
- B) 40%

5. Colin was given a 25% payrise. His weekly wage is £200 so how much extra will he get?

- A) £50
- B) £25

Percentages - quiz

6. A school that had 500 pupils in 1995 has increased its intake by 10%. How many pupils now attend the school?

- A) 505
- B) 510
- C) 550
- D) 600

7. The weight of this 600g box of cereal is increased by 25%. It will then weigh 700g.



- A) True
- B) False

8. A 20% deposit is required for this sofa. After paying the deposit there is £1300 left to pay.



- A) True
- B) False

Percentages - quiz

9. The price of this CD player has been reduced in a sale. To find the new price you would take £25 from £120.

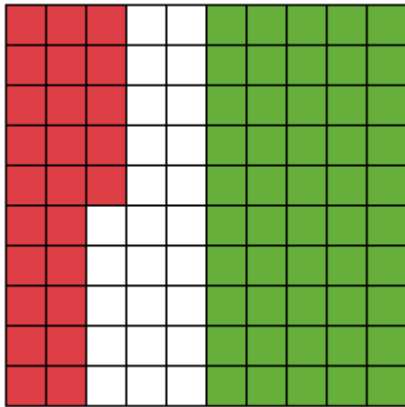


- A) True
B) False
10. Which of these is a percentage increase?
- A) The price after VAT (value added tax)
B) The price after a percentage discount

Percentages - quiz

Level C

1. What percentages of this grid are the red and green parts?



- A) 50% red, 25% green
B) 20% red, 50% green
C) 25% red, 60% green
D) 25% red, 50% green
2. 97% of the water on this planet is salt water. This means that 3% must be fresh water.
- A) True
B) False

Percentages - quiz

3. Only one of these labels for pasta sauce can be correct. Which is it?



- A) Tomatoes in juice 60%, Vegetables 20%, Tomato paste 10%, Oil 7%, Garlic 3%, Various seasonings 2%
- B) Tomatoes in juice 60%, Vegetables 15%, Tomato paste 15%, Oil 5%, Garlic 3%, Various seasonings 3%
- C) Tomatoes in juice 60%, Vegetables 20%, Tomato paste 10%, Oil 5%, Garlic 3%, Various seasonings 2%
- D) Tomatoes in juice 60%, Vegetables 25%, Tomato paste 10%, Oil 5%, Garlic 3%, Various seasonings 3%

4. Which is the bigger amount?

- A) 25% of £24
- B) 20% of £25

5. 75% of a class of 32 children play sport. How many children is this?

- A) 24
- B) 20
- C) 16
- D) 8

Percentages - quiz

6. Which of these calculator methods could you use to work out a 45% increase in 350g ?
- A) $100 \div 45 \times 350\text{g}$, then add your answer to 350g.
 - B) $100 \div 350 \times 45\text{g}$, then add your answer to 350g.
 - C) $45 \div 100 \times 350\text{g}$, then add your answer to 350g.
7. Using a calculator you could work out a 15% decrease in 12 metres by doing this sum:
- $$85 \div 100 \times 12$$
- A) True
 - B) False
8. A bus route to the town centre has been altered so that a journey of 22 minutes will now only take 75% of that time. How long is this?
- A) 16.5 minutes
 - B) 38.5 minutes
 - C) 5.5 minutes
9. Jeannie's car insurance costs £625 but she has a 'No claims bonus' discount of 15%. Which sum will **not** give the amount she must pay?
- A) First find 15% of £625 then add your answer to £625.
 - B) Find 85% of £625.
 - C) Do $85 \div 100 \times £625$.
 - D) First find 15% of £625 then take the answer away from £625.
10. Richard buys a computer priced at £530, but with a 10% discount. Heather finds the same computer selling at £420 plus VAT (VAT is 17.5%). Who has the best bargain?
- A) Heather
 - B) Richard

Percentages - quiz

Answers

Level A

1. What percentage of this grid of squares is shaded?

The correct answer is: A. 30%.

There are 100 small squares. So each one is 1 out of 100. That's the same as 1%.

30 of them are shaded so that is 30%.

2. Which is the smaller percentage?

The correct answer is: A. 20%.

20% is a smaller amount than 25%. You just need to compare 20 and 25 to find the answer.

3. Approximately 80% of households own a computer. What percentage don't own a computer?

The correct answer is: B. 20%.

To find the answer you have to take 80% from 100%. This gives 20% as the answer.

4. Which is the better wage increase?

The correct answer is: A. 10% of £120.

The question is asking which will increase £120 more, 5% or 10%. 10% is a larger part of the whole than 5%, so it will give a bigger increase.

5. 50% of £80 is £50.

The correct answer is: B. False.

50% is the same as a half of something. Half of £80 is £40.

Percentages - quiz

6. If you increase £30 by 10% you get:

The correct answer is: C. £33.

You need to find 10% of £30 (£3) and then add it on because it is a percentage increase.

7. If you decrease £80 by 25% you get:

The correct answer is: C. £60.

You have to find a quarter of £80 to find 25%. This is £20 so the answer is: $£80 - £20 = £60$

8. To find the cost of the shirt after the sale discount, you would do a percentage increase.

The correct answer is: B. False.

In a sale, the prices go down, so you do a percentage decrease.

9. The correct answer is: D. £20.

20% is a fifth so the reduction is a fifth of £25, which is £5.

The sale price is

$$£25 - £5 = £20$$

10. Look at the headlines on this newspaper. To find out how much extra you will pay you would do a percentage increase.

The correct answer is: A. True.

If interest rates go up you have to pay more for things.

Percentages - quiz

Percentages - quiz

Level B

1. What percentage of this grid is shaded?

The correct answer is: B. 24.

There are 24 small squares shaded out of 100. That is 24%.

2. Choose the set of percentages that is in the correct order of size.

The correct answer is: C. 12%, 21%, 22%, 31%, 32%, 33%

3. If 90% of garden waste can't be recycled this means that 20% can be recycled.

The correct answer is: B. False.

The two percentages must add up to 100%.

$$90\% + 20\% = 110\%$$

So the statement is false.

4. Cocoa powder contains 20% protein, 40% carbohydrate and the rest is fat. What percentage is the fat?

The correct answer is: B. 40%.

You need to add the given amounts together then subtract your answer from 100% to find how much is left.

$$100\% - 60\% = 40\%$$

So 40% of the cocoa powder is fat.

Percentages - quiz

5. Colin was given a 25% payrise. His weekly wage is £200 so how much extra will he get?

The correct answer is: A. £50.

You have to find 25% of £200. This is the same as finding a quarter. One quarter of 200 is $200 \div 4 = 50$

So Colin gets a £50 rise. Lucky Colin.

6. A school that had 500 pupils in 1995 has increased its intake by 10%. How many pupils now attend the school?

The correct answer is: C. 550.

First find 10% of 500 by dividing it by 10. That gives 50. Then add this to 500 to get 550 pupils.

7. The weight of this 600g box of cereal is increased by 25%. It will then weigh 700g.

The correct answer is: B. False.

25% (or a quarter) of 600g is $600g \div 4 = 150g$

The new weight will be

$600g + 150g = 750g$

8. A 20% deposit is required for this sofa. After paying the deposit there is £1300 left to pay.

The correct answer is: B. False.

20% (or a fifth) of £1500

$£1500 \div 5 = £300$

Take this from the price to see what's left to pay.

$£1500 - £300 = £1200$, so there is £1200 left to pay.

Percentages - quiz

9. The price of this CD player has been reduced in a sale. To find the new price you would take £25 from £120.

The correct answer is: B. False.

£25 is not the same as 25%. 25% of £120 is £30 so the new price would be $£120 - 30 = £90$.

10. Which of these is a percentage increase?

The correct answer is: A. The price after VAT (value added tax).

VAT means 'valued added tax' and it is a percentage added on to the price of goods.

Percentages - quiz

Level C

1. What percentages of this grid are the red and green parts?

The correct answer is: D. 25% red, 50% green

2. 97% of the water on this planet is salt water. This means that 3% must be fresh water.

The correct answer is: A. True.

Water can only be salt or fresh so the two amounts must add up to 100%.

$$97\% + 3\% = 100\%$$

3. Only one of the labels for pasta sauce can be correct. Which is it?

The correct answer is: C. Tomatoes in juice 60%, Vegetables 20%, Tomato paste 10%, Oil 5%, Garlic 3%, Various seasonings 2%.

The percentages add to 100%.

4. Which is the bigger amount?

The correct answer is: A. 25% of £24.

25% of £24 is one quarter of it, so divide by 4

$$£24 \div 4 = £6$$

And 20% of £25 is one fifth of it, so divide it by 5

$$£25 \div 5 = £5$$

So the first one, £6, is larger than the last one, £5.

Percentages - quiz

5. 75% of a class of 32 children play sport. How many children is this?

The correct answer is: A. 24.

Remember that 75% is the same as $\frac{3}{4}$. So first find a quarter then multiply your answer by 3.

$$25\% \text{ of } 32 = 32 \div 4 = 8$$

Now multiply by 3 to find

$$3 \times 8 = 24$$

So the answer is that 24 children play sport.

6. Which of these calculator methods could you use to work out a 45% increase in 350g ?

The correct answer is: C. $45 \div 100 \times 350\text{g}$, then add your answer to 350g.

45% is the same as $\frac{45}{100}$ which is $45 \div 100$, which gives the first bit of the sum: $45 \div 100 \times 350\text{g}$.

7. Using a calculator you could work out a 15% decrease in 12 metres by doing this sum:

$$85 \div 100 \times 12$$

The correct answer is: A. True.

Finding 15% and taking it away is the same as finding 85% of the original. The original is 100% so taking 15% off it leaves 85%

$$100\% - 15\% = 85\%$$

8. A bus route to the town centre has been altered so that a journey of 22 minutes will now only take 75% of that time. How long is this?

The correct answer is: A. 16.5 minutes.

25% has been taken off so you need to find what's left, which must be 75% of 22 minutes.

Percentages - quiz

9. Jeannie's car insurance costs £625 but she has a 'No claims bonus' discount of 15%. Which sum will **not** give the amount she must pay?

The correct answer is: A. 'First find 15% of £625 then add your answer to £625' will **not** give the amount she must pay..

You have chosen the correct wrong answer. She has a discount so the 15% should have been **taken away** from the original amount not added.

10. Richard buys a computer priced at £530, but with a 10% discount. Heather finds the same computer selling at £420 plus VAT (VAT is 17.5%). Who has the best bargain?

The correct answer is: B.

Richard has paid £477 and Heather has paid £493.50. Here's how to work them out.

For Richard: 10% of £530 is £53. He has a discount so take this away from £530.

$$£530 - £53 = \mathbf{£477}$$

For Heather: Heather: To find VAT use your calculator. Do $117.5 \div 100 \times £420$

This gives **£493.50**

So Richard has got the cheapest price.