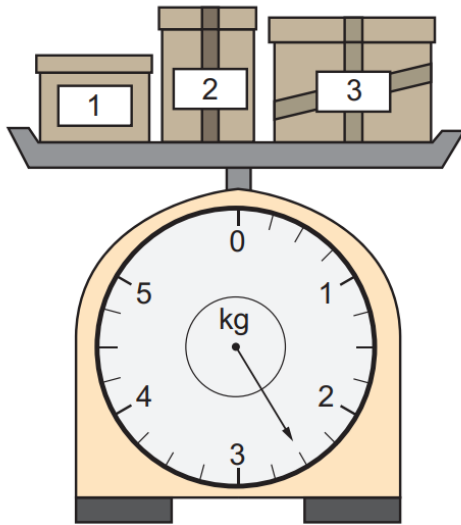




Topic 1 - Weight Measurement

1



Three packages are weighed together. Their total mass is shown on the scale.

Package 1 has a mass of 850 g.

Package 2 has a mass of 225 g.


What is the mass of package 3?


- A 975 g
- B 1175 g
- C 1425 g
- D 1525 g
- E 2425 g





2

The total mass of the objects on the left side of the balancing scales is the same as the total mass of the objects on the right.

Every  has equal mass.

Every  has equal mass.



If the mass of  is 6 grams, what is the mass of ?

- A 3 g
- B $7\frac{1}{2}$ g
- C 8 g
- D 9 g
- E 18 g



3



When this can of sweetcorn is half full, the sweetcorn and can together have a mass of 120 grams.

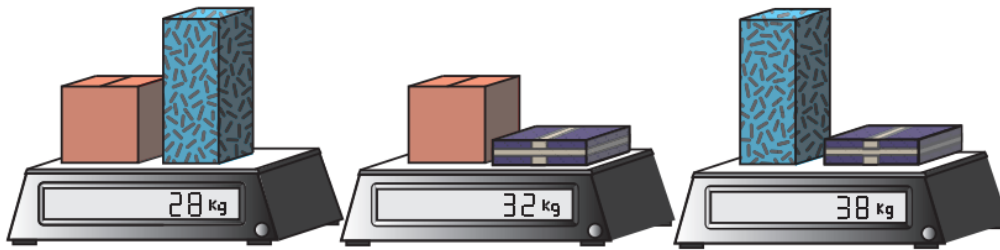
When the can of sweetcorn is one-quarter full, the sweetcorn and can together have a mass of 65 g.

What is the mass of the can and sweetcorn together when the can is three-quarters full?

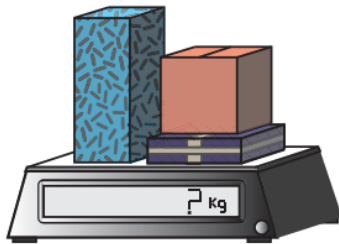
- A** 165 g
- B** 175 g
- C** 180 g
- D** 185 g
- E** 195 g



4



Three different boxes are weighed in pairs. Different pairs of boxes have combined weights of 28 kg, 32 kg and 38 kg as shown.



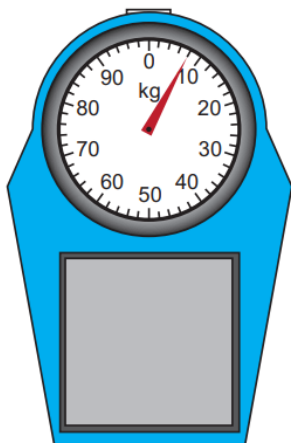
When the three boxes are weighed together, what is their combined weight?

- A 49 kg
- B 60 kg
- C 66 kg
- D 70 kg
- E 98 kg

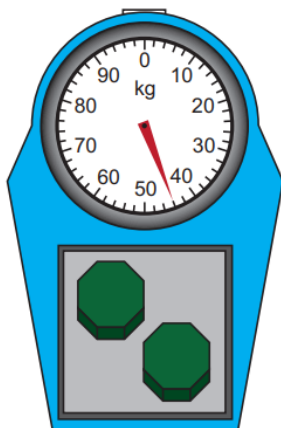


5

There is something wrong with these scales. As shown, the pointer does not start at 0 kilograms when there is nothing on the scales:



Apart from this, the scales work normally: the pointer goes up by 1 kg for every kilogram added to the scales.



Two identical blocks are placed on the scales. The pointer makes less than a full turn.

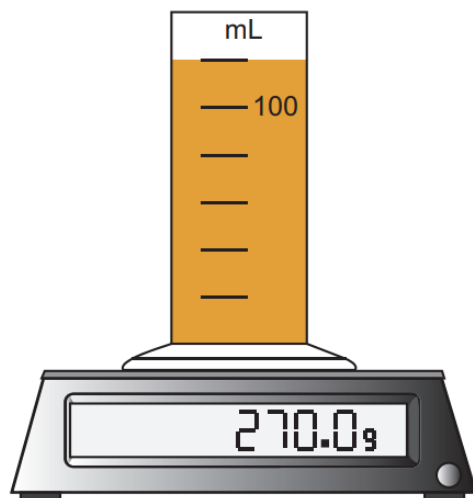
What is the mass, in kg, of one of the blocks?

- A 13 kg
- B 14 kg
- C 18 kg
- D 19 kg
- E 22 kg

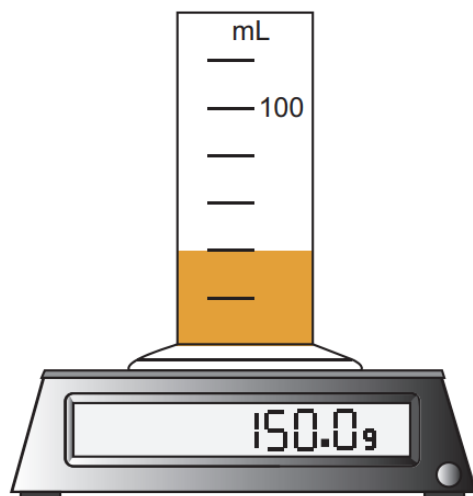


6

A container of syrup is weighed on a scale, as shown.



Some of the syrup is poured out of the container. Then it is weighed again, as shown.



What does the empty container weigh?

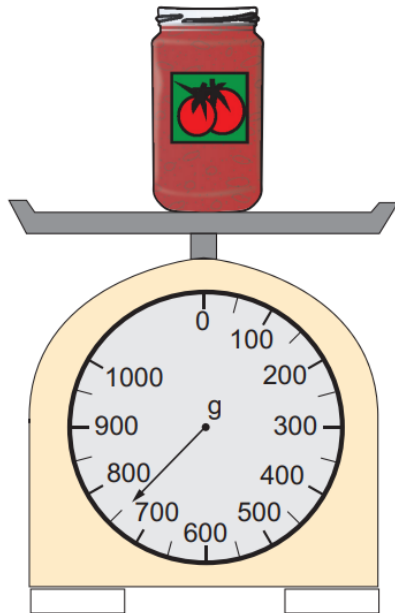
- A 80 g
- B 90 g
- C 110 g
- D 120 g
- E 150 g



7

Rana needs 650 grams of cooking sauce.

She places a glass jar of cooking sauce on a scale.



The glass jar weighs 330 g when empty.

How much more cooking sauce does Rana need?

- A 100 g
- B 130 g
- C 200 g
- D 230 g
- E 430 g



8

I have an equal number of \$1 and \$2 coins.

The total value of my coins is \$54.

\$1 coins weigh 9 grams and \$2 coins weigh 7 grams.

What is the total weight of all my coins?

A 144 g

B 288 g

C 414 g

D 432 g

E 576 g



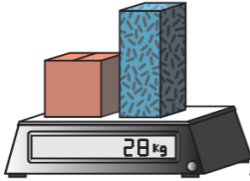

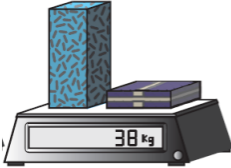
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Answer Key

1	C
2	D
3	B
4	<p>Let's label the three boxes 'tall', 'medium' and 'flat'.</p> <p> This picture tells us that medium + tall = 28 kg.</p> <p>This picture tells us that medium + flat = 32 kg.</p> <p>So using both pieces of information together, we can work out that the flat box must be 4 kg heavier than the tall box.</p> <p></p> <p> Now we know the flat box is 4 kg heavier, we can work out that two tall boxes would have a mass of 34 kg, and so the tall box has a mass of 17 kg, and the flat box has a mass of 21 kg.</p> <p>That means the medium box must have a mass of 11 kg, and the total mass of all three is $17 \text{ kg} + 21 \text{ kg} + 11 \text{ kg} = 49 \text{ kg}$.</p> <p>So the correct answer is A 49 kg.</p> <p>Alternatively, if we add together the measurements from the three weighings, we get $28 \text{ kg} + 32 \text{ kg} + 38 \text{ kg} = 98 \text{ kg}$. However, this includes every box twice, so to work out the mass of the three boxes together, we need to work out $98 \div 2 = 49$.</p>



5	<p>Each mark on the scale represents 2 kg, because 10 kg is divided into five equal sections, and $10 \div 5 = 2$.</p> <p>When the scales are empty, the pointer is one mark below 10 kg so the reading is 8 kg.</p> <p>When the blocks are placed on the scales, the pointer is two marks above 40 kg so the reading is 44 kg.</p> <p>So the two blocks have a mass of $44 - 8 = 36$ kg.</p> <p>To find the mass of just one block we need to work out half of 36 kg, which is 18 kg.</p> <p>So the correct answer is C 18 kg.</p>
6	C
7	<p>Reading from the scale, the arrow is halfway between 700 g and 800 g so the jar and cooking sauce together weigh 750 g.</p> <p>When the jar is empty it weighs 330 g so we need to subtract the weight of the empty jar to find the weight of the sauce. $750 - 330 = 420$ so the weight of the sauce is 420 g.</p> <p>Rana needs 650 g of sauce. She has 420 g so she needs $650 - 420 = 230$ g more sauce, so the correct answer is D 230 g.</p>
8	B