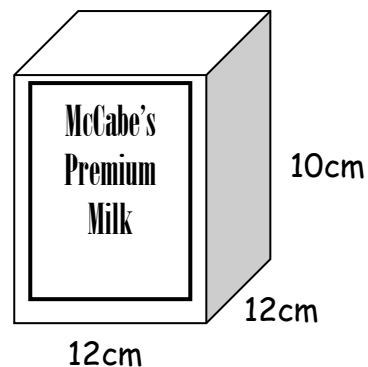
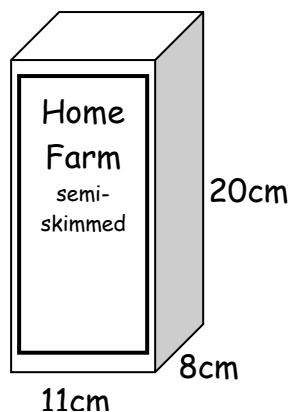




S2 February Assessment Revision

Previous Revision

- Round the following numbers to
 - 1 decimal place
 - 3 decimal places
 - 28.4628
 - 377.38456
 - 99.9999999
- If $g = -5$, $h = 2$ and $i = 3$, evaluate the following:
 - $2g - hi$
 - $gh - 2i$
- A pattern has a rule of $B = 7A + 3$
 - Evaluate B when $A = 7$
 - Evaluate B when $A = 18$
- A pattern has a rule of $M = 5P - 4$
 - Evaluate P when $M = 41$
 - Evaluate P when $M = 71$
- Two rival dairy farmers use milk cartons with the dimensions shown below.



- Calculate the volume of each carton and state which holds more milk.
- Home Farm charge £1.20 for a carton and McCabe's charge £1.30. Which milk is better value for money?



6. Multiply out the following brackets and simplify:

a. $5(8r + 2) - 3(8r - 1)$

b. $9 - 4(6v - 5) - 6(7v + 4)$

7. Factorise the following expressions:

a. $6p^3 - 18p$

b. $15r^3s^4 - 45r^3s^5$

c. $i^8j^4k^2 - i^4j^5k^3$

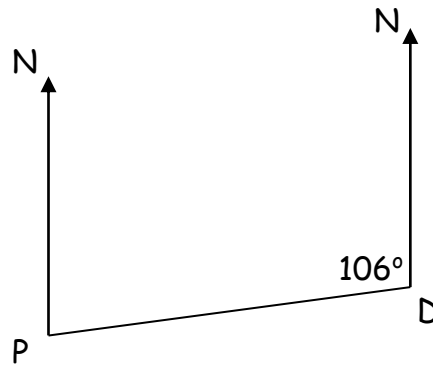
8. Evaluate the following expressions where $i = -6$, $j = 4$ and $k = -8$:

a. $(j - i)^3$

b. $jk^2 - i^2 + ij$

c. $(k - j)^2 - ijk$

9. The diagram shows the positions of places in Scotland. Find the bearing of:



a. Perth (P) from Dundee (D).

b. Dundee (D) from Perth (P).

Fractions

1. Find the following:

a. $\frac{3}{4} - \frac{1}{7}$

b. $1\frac{3}{7} - \frac{4}{5}$

c. $\frac{5}{9} \times \frac{4}{3}$

d. $2\frac{1}{2} - 1\frac{5}{6}$

e. $\frac{4}{9} \div \frac{2}{3}$

f. $\frac{3}{7} + \frac{1}{2} + \frac{5}{8}$

2. A bread recipe needs $\frac{4}{5}$ kg of wholemeal flour and $\frac{3}{4}$ kg of white flour. How much flour is needed altogether?



3. A survey of pupils showed that $\frac{1}{5}$ of them walked to school, $\frac{2}{3}$ came by bus and the rest came by car.

- What fraction came by car?
- If there were 900 pupils in the school, how many came by car?

Equations

1. Solve the following:

a. $3x + 9 = 65 - x$

b. $8 + 5n = 22 + 3n$

c. $9k + 8 = 2k + 176$

d. $5h - 25 = 89 - h$

2. In a school of 845 pupils, there are 29 less girls than boys.

Let there be x girls.

- Write down an equation which represents this.
- Solve the equation to find the number of girls and the number of boys in the school.

3. Multiply out the following brackets and simplify:

a. $3(g - 3) + 2g + 7$

b. $9 - 4(h - 6) + 2h$

c. $5(d - 2) - 2(d + 1)$

d. $6 - 2(w - 4) - 7(w - 5)$

4. Solve the following equations:

a. $5r - 6 = 20$

b. $3(g - 3) = 6(g + 5)$

c. $5(h + 2) + 2h = 3(h + 4)$

d. $6 - 3(j - 1) + 5(j + 3) = 10$

5. Solve the following inequations:

a. $2e - 1 > 7$

b. $5p + 3 < 18$

Statistics

1. Find the mode, range and median of the following numbers:

23, 19, 40, 31, 25, 20, 35, 29, 39, 20, 27, 38

2. Calculate the mean of the following sets of data:

a. 4, 7, 3 and 6

b. 17, 56, 43, 33 and 31

3. Calculate the angles the following sections would represent in a pie chart:

Favourite Sweet	Number of People
Boost	14
Minstrels	27
Fruit Gums	19
Total	60

4. The following information represents the weight of people, in kg, at a training camp:

71, 69, 60, 56, 72, 66, 64, 64, 68, 74, 68, 85, 68, 77,
59, 64, 68, 79, 75, 78, 70, 68, 68, 66, 69, 68

a. Display the information in an ordered stem and leaf diagram.

- b. Find
- Range
 - Mode
 - Median

5. The following information below represents the ages of people on a bus:

29, 15, 8, 12, 8, 21, 34, 20, 11, 16, 28, 8, 5, 14

a. Display the information in an ordered stem and leaf diagram.

- b. Find
- Range
 - Mode
 - Median



6. The results of a sports survey are shown in the table below.

Sport	Number
Swimming	12
Football	5
Athletics	20
Tennis	3
Track Cycling	15
Hockey	5

Calculate the size of angle each section would represent in a pie chart.

Probability

- There are 5 blue, 3 green, 8 red and 6 black skittles.
 - Find the probability of selecting a black skittle at random
 - 5 red skittles are removed, what is the probability of selecting 1 of the remaining red skittles.
- In a bag of 150 sweets there are 38 red, 32 yellow, 44 green and the remainder are orange.
 - If Andrew chooses a sweet at random which colour is he most likely to select and what is the probability of selecting this colour?
 - 12 orange, 27 yellow, 15 green and all the red sweets are eaten. What is the probability that Andrew now chooses a yellow sweet?
- There are 4 boys and 14 girls in a classroom. A child is chosen at random and asked to roll a die, numbered 1 to 6.

Which is more likely:

- The child is female?
- The number rolled is a 3?

Explain your answer.



4. Mr McQuillan has 20 felt-tipped pens. Three of these do not work.
- How many pens do work?
 - What is the probability of taking a pen at random and it is:
 - Working?
 - Not working?

Standard Form

1. Write the following numbers in scientific notation:

a. 5,680,000

b. 0.00007736

c. 430,900

d. 0.00049029

e. 0.0000004

f. 23,001,000

2. Write the following in full:

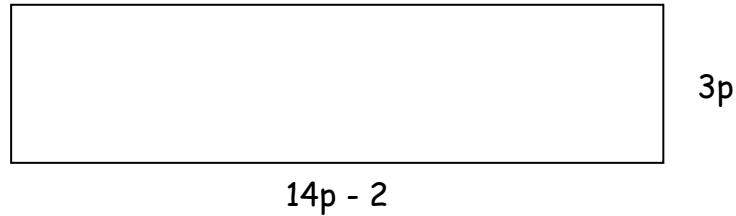
a. 4.2×10^4

b. 7.32×10^6

c. 4.8×10^{-5}

Problem Solving

1. A rectangle can be seen below:



- Find a simplified expression for the area of the rectangle.
- Find a simplified expression for the perimeter of the rectangle.

The perimeter of the shape is 150m.

- Hence, find the value of p .

2. To go on a school trip a group of 5 pupils have raised £4168 in total.

The pupils are unsure exactly how much each of them has raised.

Lynne raised a certain amount.

Ross raised £80 more than Lynne.

Roisin raised £138 less than Lynne.

Phil raised double the amount that Lynn raised.

Laura raised £482 more than Lynne raised.

- Build an equation which represents the above information.
- Hence, calculate the amount of money each person raised.



3. A family has 5 members in total with a combined age of 96 years.

The family are going on holiday; however the travel agent cannot read the age of the youngest child to complete the booking form.

The agent knows that one of the siblings is 4 years older than the youngest sibling and the other sibling is 7 years older than the youngest sibling.

Both parents are 30 years older than their youngest child.

By creating an equation, find the age of the youngest child.

4. A bell rings every 3 minutes, a horn blasts every 4 minutes and a siren blares every 5 minutes. At 5pm they all sound at the same time.

When will they next sound at the same time?