

Starter

1. Round to 2 s.f.

a. 1.828

b. 85917

c. 0.009082

2. Fully factorise

a. $18k^2 - 54k$

b. $63xy^3 + 28x^4y^2$

3. Estelle is creating a blend of coffee by grinding Columbian and French beans in the ratio 5:3.

She has 300 g of Columbian beans and 165 g of French beans.

What is the largest weight of blend she can produce?

4. Lorna is currently on a Duke of Edinburgh training exercise.

She leaves base camp and walks on a bearing of 127° to meet her leader.

What bearing should she then take to return to camp?

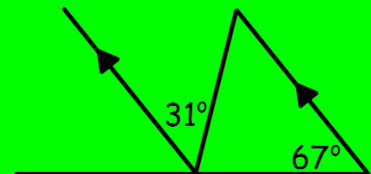
Starter

1. Change the following into scientific notation

a. 0.000650

b. 90800000

2. Copy the diagram and fill in the missing angles



3. Solve

a. $5x - 2(x + 3) = 10$

b. $6(x + 5) - 2(2x - 3) = 0$

4. Amy has joined Lorna on the Duke of Edinburgh training exercise.

She leaves base camp and walks directly East for 6 km.

Lorna leaves camp and walks directly South for 5 km.

How far apart are the girls?

Starter

1. Find

a. $3^{2/5} + 3^{3/4}$

b. $12 - 2^{5/6}$

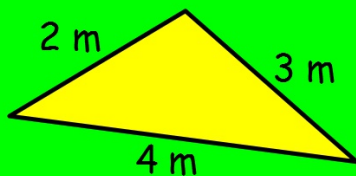
2. Fully factorise

a. $24a^2b + 30ab^2$

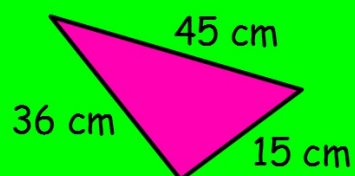
b. $42x^2yz^3 - 35x^2y^2z^4$

3. Which of these are right-angled triangles?

a.



b.



4. Grace has now joined Lorna and Amy on the Duke of Edinburgh training exercise. The girls all leave base camp (B) and walk on a bearing of 120° to point P. They then change direction and walk on a bearing of 050° to point Q. Find angle BPQ.

Starter

1. Solve

a. $4(x^2 + 1) = 2x(2x - 4)$

b. $10 - 3(3x - 5) = 2(3x + 1)$

2. Change the following into number form

a. 3.84×10^7

b. 1.097×10^{-4}

3. The crowd at a football stadium is increasing by 2.5% each year.

Three years ago, the average crowd was 8500. What will it be now?

Give your answer to 2 s.f.

4. Liam and Jack have now started their Duke of Edinburgh expedition.

Liam leaves the hostel and walks NW for 3.6 km whilst Jack leaves the hostel on a bearing of 045° and walks for 1.8 km.

How far apart will the boys be?

Starter

1. Brian, Hamish and Luke shared a bumper pack of Haribo in the ratio 4 : 5 : 3.
If there were 96 sweets in the bag, how many did Hamish get?
2. Find the circumference of a circle with
 - a. diameter = 9 cm
 - b. radius = 15 cm
3. Which of these fractions is bigger, and why?
 - a. $\frac{2}{3}$ or $\frac{3}{4}$
 - b. $\frac{5}{8}$ or $\frac{7}{10}$
4. The Duke of Edinburgh expedition is finally over.
At the start of the week, Lorna's backpack weighed 7.5 kg.
At the end of the week, it weighed 5.9 kg.
Express this decrease as a percentage of the original weight.