Starter

1. Express the following as a product of prime factors

   a. 420 b. 165

2. Change the following into scientific notation

   a. 3400 b. 0.00005 c. 109000 d. 0.068

3. Find

   a. $^{5}/_{7} + {}^{2}/_{5}$ b. $3^{1}/_{6} - 1^{2}/_{3}$ c. $12 \div 3^{3}/_{4}$

4. Fully factorise

   a. $6abc - 18a^2c$ b. $54x^3yz^2 + 9x^2y^4z^2$

Starter

1. Find the following

   a. $^{2}/_{9}$ of 1053 b. 12.5% of 3360

2. Change the following into number form

   a. 2.9×10^{3} b. 1.57×10^{-2} c. 9.991×10^{7}

3. There are 18 flavoured sweets in a bag: 6 coffee, 4 lime and 8 strawberry. One is eaten at random.
   a. What's the probability that it was lime flavoured?
   b. If it was lime, what's the probability that the next chosen is lime?
   c. If the first sweet wasn't lime, what's the probability of the second one being lime?

4. Solve

   a. $6 + 3(3x + 5) = 7(x - 3)$ b. $2(x + 6) - 4(2x - 5) = 1$

Starter

1. Round to 2 s.f.
   a. 46823 b. 0.08452 c. 1.009

2. One lap of a running track is 400 m.
   How many laps must be run in order to complete a 10 km race?

3. If a = 3, b = (-9) and c = 2, evaluate
   a. $3ac + b$ b. $ac^2 + b^2$ c. $(c - a)^3 - 3b$

4. As a New Year's resolution, Jack decides that he's going to run x km every week. Luke thinks he can run 10 km more every week than Jack, and Nathan thinks he can run twice as far as Jack. If they run a total of 37 km in the first week, how far did Jack run?

Starter

1. Display the following data in an ordered stem and leaf diagram:

   125, 137, 138, 119, 121, 137, 128, 115, 109, 124, 117, 131

   Find the a. range b. mode c. median

2. Multiply out the brackets and simplify

   a. $3(2x + 3) - 2(3x - 3) + 4(x + 2)$ b. $4(g^2 - 7) + 10 - 2g(g + 9)$

3. 1 litre is approximately equal to 1.75 pints.
   If a recipe for a fruit drink needs 20 millilitres of water, how much is this approximately in pints?
   Give your answer in scientific notation.

Starter

1. Calculate
   a. $^{3}/_{4} - {}^{9}/_{16}$ b. $1^{2}/_{3} \times 3^{1}/_{2}$ c. $4^{1}/_{5} + 1^{2}/_{9}$

2. The ratio of the lengths of two rectangles is 6:5.
   The length of the second is 7.5 cm. What is the length of the first?

3. Lucy's parents reluctantly agree to pay 20% of her phone bill.
   If the bill is £285, how much will Lucy have to pay?

4. Fill in all of the missing angles