

## Edexcel GCSE Mathematics Calculator 2022 Higher Paper 3 Revision Worksheet

1. Make  $a$  the subject of the formula  $p = 3a - 9$
2. Rob has been asked to divide 120 in the ratio 3: 5. Here is his working:  $120 \div 3 = 40$     $120 \div 5 = 24$

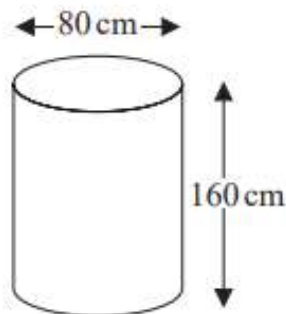
Rob's working is not correct. **Describe what Rob has done wrong.**

3. 200 students chose one language to study.  
Each student chose one language from French or Spanish or German

Of the 200 students  
90 are boys and the rest of the students are girls,  
70 chose Spanish,  
60 of the 104 students who chose French are boys,  
18 girls chose German.

**Work out how many boys chose Spanish.**

4. Karina has 4 tanks on her tractor.  
Each tank is a cylinder with diameter 80 cm and height 160 cm.



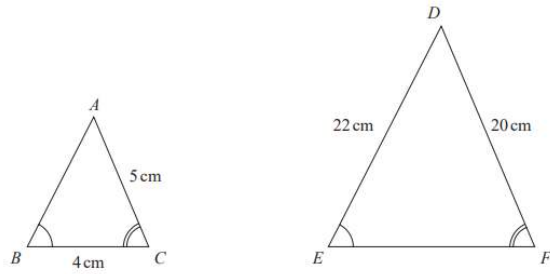
The 4 tanks are to be filled completely with a mixture of fertiliser and water.

The fertiliser has to be mixed with water in the ratio 1 : 100 by volume.  
Karina has 32 litres of fertiliser.

$$1 \text{ litre} = 1000 \text{ cm}^3$$

Has Karina enough fertiliser for the 4 tanks?  
You must show how you get your answer.

5. Triangle  $ABC$  and triangle  $DEF$  are similar.



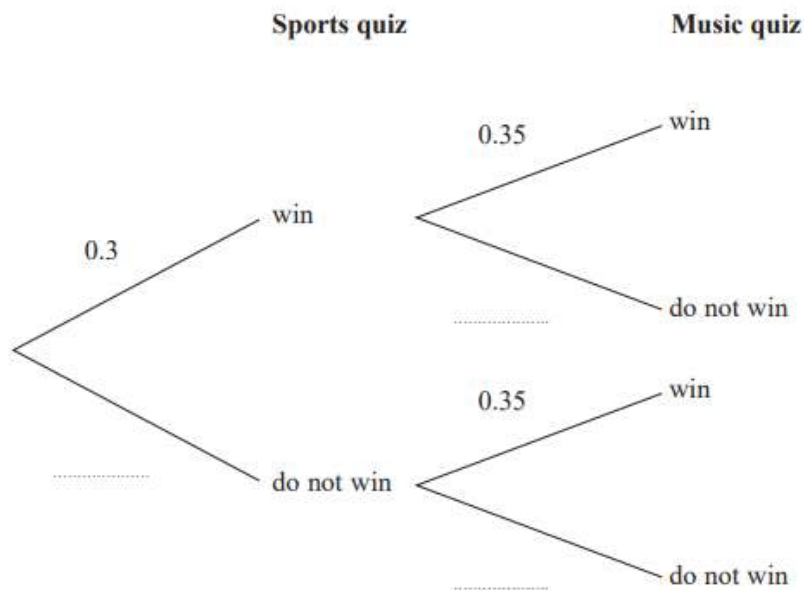
- (a) Work out the length of  $EF$ .  
 (b) Work out the length of  $AB$ .

6. One weekend the Keddie family is going to do a sports quiz and a music quiz.

The probability that the family will win the sports quiz is 0.3

The probability that the family will win the music quiz is 0.35

- (a) Complete the probability tree diagram.



(2)

- (b) Work out the probability that the Keddie family will win both the sports quiz and the music quiz.

7. Change a speed of 180 km per hour to metres per second.
8. There are 30 women and 20 men at a gym.  
The mean height of all 50 people is 167.6 cm.  
The mean height of the 20 men is 182 cm.  
Work out the mean height of the 30 women.
9. Peter has to subtract  $(x^2 - 2x - 4)$  from  $(x^2 + 3x + 5)$ .

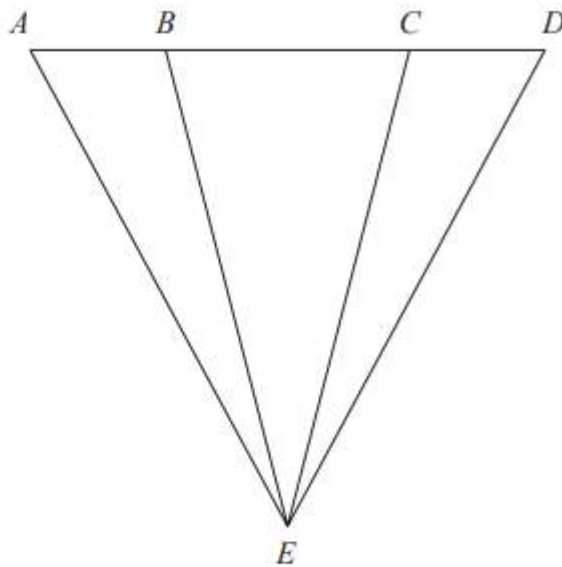
Here is his working:

$$\begin{aligned}(x^2 + 3x + 5) - (x^2 - 2x - 4) \\= x^2 + 3x + 5 - x^2 - 2x - 4 \\= x + 1\end{aligned}$$

**Explain what is wrong with Peter's working.**

The diagram shows a triangle  $ADE$ .

10.



$$AE = DE$$

$$AB : BC : CD = 1 : 2 : 1$$

Prove that triangle  $ACE$  is congruent to triangle  $DBE$ .