Test 3 Revision Topics 9-12

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Topic 9 | *ABCD* is a rectangle with length 25 cm and width 10 cm.The length of is increased by 10%.The width is increased by 20%.Find the percentage increase in the area of the rectangle. | Arnie saw a camera priced at £250 in London. He saw the same camera for $297.50 in New York.This is a 30% saving.How many dollars are there to the pound? | In a village 35% of the population are female.60% of the females have blue eyes.38% of the males have blue eyes.What percentage of the population of the village have blue eyes? | In a company, the ratio of the number of men to women is 3:2.40% of the men are under 25.10% of the women are under 25.What percentage of all of the people in the company are aged under 25? |
| Topic 9 | Daniel bakes 420 cakes. He bakes only vanilla, banana, lemon and chocolate cakes. $\frac{2}{7 }$ are vanilla cakes. 35% are banana cakes. The ratio lemon to chocolate is 4:5Work out the number of lemon cakes Daniel bakes. | On a school trip the ratio of the teachers to students is 1 : 15The ratio of the male students to female students is 7 : 5Work out what percentage of all the people on the trip are female students. Give your answer correct to the nearest whole number. | Kim, Laura and Molly share £385The ratio of the amount of money Kim gets to the amount of money Molly gets is 2 : 5 Kim gets £105 less than Molly gets.What percentage of the £385 does Laura get? | Colin, Dave and Emma share some money.Colin gets $\frac{3}{10}$ of the money.Emma and Dave share the rest of the money in the ratio 3 : 2What is Dave's share of the money? |
| Topic 10 | *ABC* is an equilateral triangle.*AD* is perpendicular to *BC*.Prove that triangle *ADC* is congruent to triangle *ADB*. | Explain why triangle *ABE* and triangle *CDE* are similar. | Calculate the length ED. | Jim makes a model of his school.He uses a scale of 1 : 50The area of the door on his model is 8 cm2.Work out the area of the real door in the school. |
| Topic 11 | *A*(−2, 1), *B*(6, 5) and *C*(4, *k*) are the vertices of a right-angled triangle *ABC*. Angle *ABC* is the right angle.Find an equation of the line that passes through *A* and *C*. Give your answer in the form *ay* + *bx* = *c* where *a*, *b* and *c* are integers. | *P* has coordinates (–9,7)*Q* has coordinates (11, 12)*M* is the point on the line segment *PQ* such that *PM* : *MQ* = 2 : 3Line **L** is perpendicular to the line segment *PQ*.**L** passes through *M*. Find an equation of **L**. | Find an equation of the line that passes through *C* and is perpendicular to *AB*. |
| Topic 12 | Tom wants to estimate the number of termites in a nest.On Monday Tom catches 80 termites. He puts a mark on each termite. He then puts all 80 termites back in the nest.On Tuesday he catches 60 termites. 12 of these termites have a mark on them.Work out an estimate for the total number of termites in the nest. You must write down any assumptions you have made. | A scientist wants to estimate the number of fish in a disused canal.He catches a sample of 30 fish from the canal. He marks each fish with a dye and then puts them back in the canal.The next day the scientist catches 20 fish from the canal. He finds that 4 of them are marked with the dye.Estimate the total number of fish in the canal. |