

Revision F5 (October Exam) A [43]

1.

Carol sells strawberries.

In 2002 she reduced the weight of strawberries in each packet by 20%.

After receiving complaints, she increased the weight in 2003 back to the amount each packet contained in 2001.

What percentage increase did Carol use? Give your answer as a percentage of the contents in a packet in 2002.

(Total 3 marks)

2.

y is directly proportional to the square of x .

When $y = 5$, $x = 4$.

Find the value of y when $x = 8$.

(Total 3 marks)

3.

Jack's parents are going away for five days and Jack's dad leaves 8 dinners in freezer for him to eat. Jack will eat one dinner per day.

(a) On the third day, how many different dinners will Jack have to choose from?

(b) In how many different ways can the dinners be eaten over the five days?

(Total 3 marks)

4.

(a) Simplify $\sqrt{8} + \sqrt{50}$

(2)

(b) Hence simplify

$$(\sqrt{8} + \sqrt{50})(\sqrt{24} + \sqrt{54})$$

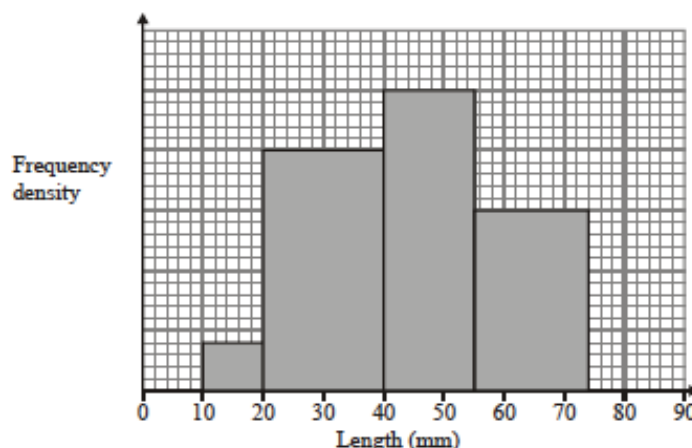
giving your answer in its simplest surd form.

(3)

(Total 5 marks)

5.

The histogram shows the lengths of leaves of a certain species of plant.

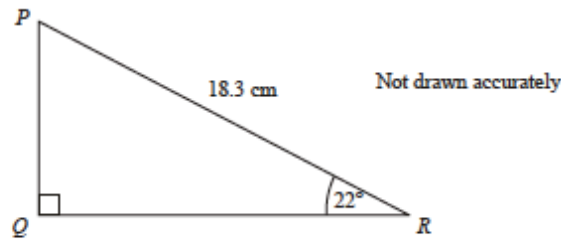


Forty-two leaves measured 25 mm or less. How many leaves measured 60 mm or more?

(Total 4 marks)

6.

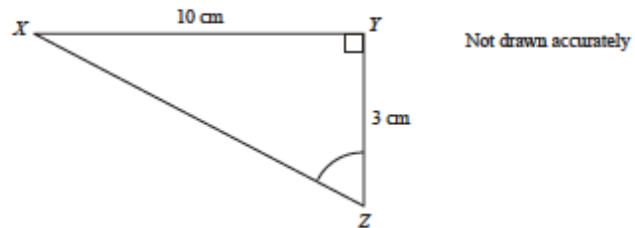
- (a) In triangle PQR , angle Q is a right angle.
Angle $R = 22^\circ$ and $PR = 18.3$ cm



Calculate the length of QR .

(3)

- (b) In triangle XYZ , angle $Y = 90^\circ$
 $XY = 10$ cm and $YZ = 3$ cm



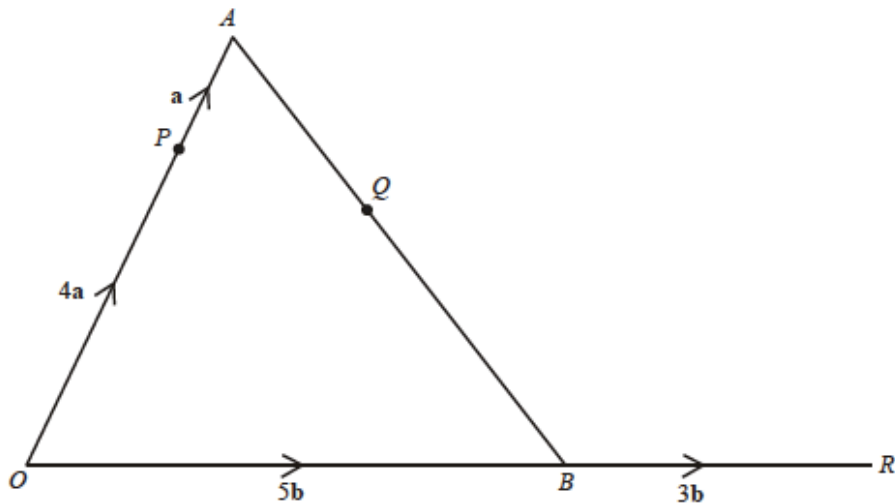
Work out the size of angle Z .

(3)

(Total 6 marks)

7.

In the diagram $\vec{OP} = 4\mathbf{a}$, $\vec{PA} = \mathbf{a}$, $\vec{OB} = 5\mathbf{b}$, $\vec{BR} = 3\mathbf{b}$ and $\vec{AQ} = \frac{2}{5} \vec{AB}$



Not drawn accurately

- (a) Find, in terms of \mathbf{a} and \mathbf{b} , simplifying your answers,

(i) \vec{AB}

(1)

(ii) \vec{PQ}

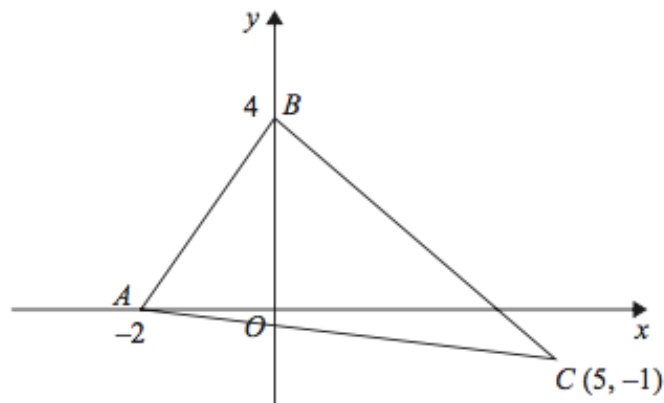
(2)

- (b) Show clearly that points P , Q and R lie on a straight line.

(3)

(Total 6 marks)

8.



Find an equation of the line that passes through C and is perpendicular to AB . (Total 4 marks)

9.

A bag contains twelve numbered counters.
The counters are either red or yellow.
The table shows how the counters are coloured and numbered.

		Number on counter			
		10	20	30	40
Colour	Red	1	1	2	3
	Yellow	2	2	0	1

For example there are 3 red counters numbered 40.

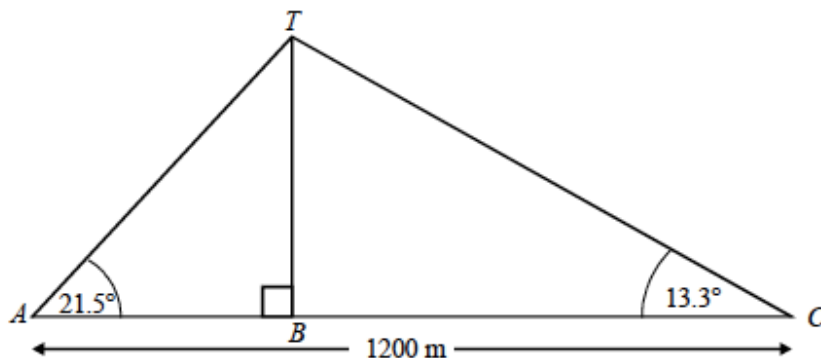
A counter is taken at random from the bag and is not replaced.
A second counter is then taken at random from the bag.

Calculate the probability that the two counters taken from the bag have different colours and the total of the two numbers is 50.

(Total 5 marks)

10.

A , B and C are three points which lie in a straight line on horizontal ground.
 BT is a vertical tower.



The angle of elevation of T from A is 21.5° .
The angle of elevation of T from C is 13.3° .
 $AC = 1200$ m.
Calculate the height of the tower.

(Total 4 marks)