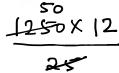# Problem 0580/41/M/J/23/Q1

(a) An orchard has 1250 trees.
The trees are in the ratio apple : pear : cherry = 12 : 9 : 4.

(i) Calculate the number of apple trees.

$$\frac{\overset{50}{\cancel{1250}} \times 12}{\cancel{25}}$$

.... 6 00 .... [2]

(ii) Last year in the orchard, the mean mass of fruit produced was 64 kg per tree.

Calculate the total mass of fruit produced last year.
Give your answer in tonnes.
[1 tonne = 1000 kg]

$$\frac{64 \times 1250}{1000}$$

....................80.......................... tonnes [2]

(iii) Last year, the mean mass of pears produced was 54 kg per tree.
This was a decrease of 10% on the mean mass of pears produced per tree from the year before.

Calculate the mean mass of pears produced by each pear tree the year before.

$$\frac{\overset{6}{\cancel{54}} \times \cancel{100}}{\cancel{90}}$$

..........................60.......................... kg [2]

(iv) The orchard loses $\frac{1}{5}$ of its total number of trees in a storm.

Calculate the number of trees that remain.

$$1250 \times \frac{4}{5}$$

..........................1000.......................... [2]

(b) Paulo buys some pears from a market.
Pears cost $0.54 each or 0.51 euros each.

(i) Paulo pays **in dollars** for 12 pears.

Calculate the change he receives from $10.

$$10 - 12 \times 0.54$$

$ ....3.52........ [2]

(ii) The exchange rate is $1 = 0.826$ euros.

Calculate how much more Paulo pays for **each** pear when he pays in euros.
Give your answer in dollars, correct to the nearest cent.

$$\frac{0.51}{0.826} - 0.54 = 0.0774$$

$ ....0.08........ [3]