



## RATIO & PROBABILITY PROBLEMS 7:2

Write your ratio answers in the form \_\_\_\_ : \_\_\_\_.

Write your probability answers as a fraction.

**In a managed forest, three different saplings are planted. The trees are beech, holly and maple. For every beech tree planted, there are 2 holly trees planted and 5 maple trees planted.**

- 1) Write down the ratio of trees. \_\_\_\_ beech : \_\_\_\_ holly : \_\_\_\_ maple trees
- 2) If 6 beech trees were planted, how many holly trees would be planted? \_\_\_\_
- 3) If 40 maple trees were planted, how many beech trees would be planted? \_\_\_\_
- 4) What is the probability that a tree chosen at random:
  - a) would be a beech? \_\_\_\_
  - b) would be a maple? \_\_\_\_
  - c) would be a holly? \_\_\_\_
  - d) would not be a beech? \_\_\_\_

**Due to a rise in the demand for beech, the ratios of trees planted change to 3 beech : 2 holly : 5 maple.**

- 5) If 36 beech trees were planted, how many maple trees would be planted? \_\_\_\_
- 6) If 80 trees were planted altogether, how many trees would be:
  - a) beech = \_\_\_\_ trees
  - b) holly = \_\_\_\_ trees
  - c) maple = \_\_\_\_ trees
- 7) What is the probability that a tree chosen at random:
  - a) would be maple? \_\_\_\_
  - b) would not be holly? \_\_\_\_
  - c) would not be beech or maple? \_\_\_\_
  - d) would be a holly or beech? \_\_\_\_

**The saplings have a probability of 70% of surviving to become adult trees.**

- 8) If 80 trees are planted, about how many will become adult trees? \_\_\_\_\_





## RATIO & PROBABILITY PROBLEMS 7:2 ANSWERS

In a managed forest, three different trees are planted. The trees are beech, holly and maple. For every beech tree planted, there are 2 holly trees planted and 5 maple trees planted.

- 1) Write down the ratio of trees. **1 beech : 2 holly : 5 maple trees**
- 2) If 6 beech trees were planted, how many holly trees would be planted? **12**
- 3) If 40 maple trees were planted, how many beech trees would be planted? **8**
- 4) What is the probability that a tree chosen at random:
  - a) would be a beech?  **$\frac{1}{8}$**
  - b) would be a maple?  **$\frac{5}{8}$**
  - c) would be a holly?  **$\frac{2}{8}$  or  $\frac{1}{4}$**
  - d) would not be a beech?  **$\frac{7}{8}$**

Due to a rise in the demand for beech, the ratios of trees planted changes to 3 beech : 2 holly : 5 maple.

- 5) If 36 beech trees were planted, how many maple trees would be planted? **60**
- 6) If 80 trees were planted altogether, how many trees would be:
  - a) beech = **24** trees
  - b) holly = **16** trees
  - c) maple = **40** trees
- 7) What is the probability that a tree chosen at random:
  - a) would be maple?  **$\frac{5}{10}$  or  $\frac{1}{2}$**
  - b) would not be holly?  **$\frac{8}{10}$  or  $\frac{4}{5}$**
  - c) would not be beech?  **$\frac{7}{10}$**
  - d) would be a holly or beech?  **$\frac{5}{10}$  or  $\frac{1}{2}$**

The saplings have a probability of 70% of surviving to become adult trees.

- 8) If 80 trees are planted, about how many will become adult trees? **70% of 80 = (10% of 80) x 7 = 8 x 7 = 56.**

So **56** of the 80 trees will become adult trees.

