**AQA – Probability – GCSE Statistics – 2021**

1. June/2021/Paper_1F/No.1
   An event is more likely to happen than not.

   Circle a possible probability of the event happening.

   **[1 mark]**

   0         $\dfrac{2}{7}$         60%         1.4

2. June/2021/Paper_1F/No.4
   A bank asks a representative sample of 50 customers about internet banking.

   40 of these customers feel internet banking is secure.

   Based on this sample, estimate the proportion of the **population** who feel that internet banking is secure.

   Circle your answer.

   **[1 mark]**

   0.8         0.2         0.6         0.4

**3.** June/2021/Paper_1F/No.5(b,c)

**(b)** Jack chooses one of the 40 weeks at random.

**(b) (i)** What is the probability he chooses a week in which he watched **five** matches?

[1 mark]

Answer _____

**(b) (ii)** What is the probability he chooses a week in which he watched exactly **two** matches?

[2 marks]

_____

_____

Answer _____

**(b) (iii)** What is the probability he chooses a week in which he watched at least **three** matches?

[1 mark]

_____

_____

Answer _____

**4.** June/2021/Paper_1F/No.6(c)

**(c)** Assume that they decide to buy one of the cushions represented in the pictogram.

**(c) (i)** What is the probability that they buy a **white** cushion?

[3 marks]

_____

_____

_____

5. June/2021/Paper_1H/No.1

Two fair spinners, each numbered 1 to 8, are spun.

The numbers they land on are added up.

What is the probability the total is 16?

[1 mark]

$$\frac{1}{4} \qquad\qquad \frac{1}{16} \qquad\qquad \frac{1}{32} \qquad\qquad \frac{1}{64}$$

6. June/2021/Paper_2F/No.6

In a charity raffle 500 tickets are sold.

The prizes are,

- one holiday in Florida
- four weekend breaks in the UK
- 15 cash prizes of £50.

Tickets are chosen at random for the prizes.

Emma has one ticket.

(a) Write down the probability that Emma wins the holiday in Florida.

[1 mark]

Answer _____

(b) Work out the probability that Emma does **not** win any of the prizes.

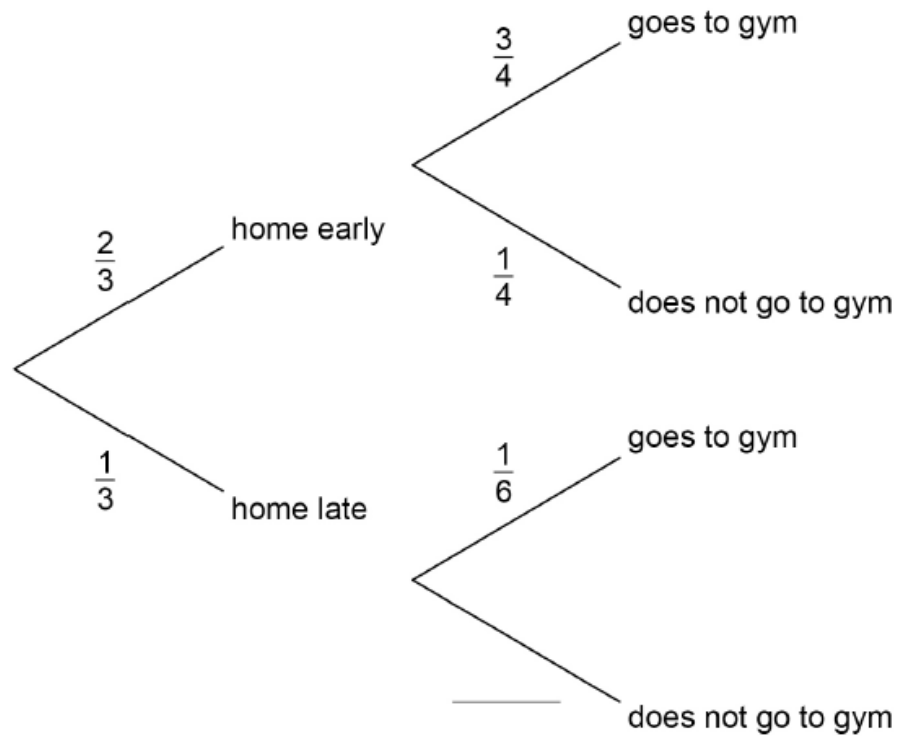Give your answer as a fraction in its simplest form.

[3 marks]

_____

_____

Answer _____

3

**7.** June/2021/Paper_2F/No.15

Darcey sometimes goes to the gym after work.

The probability of going to the gym is affected by whether she arrives home early or late.

The probabilities are shown in the tree diagram.



**(a)** Write the missing probability on the tree diagram.

**[1 mark]**

**(b)** What does the probability of $\dfrac{3}{4}$ represent in this context?

**[1 mark]**

_____

_____

**(c)**    Calculate the probability that, on a randomly chosen work day, Darcey will get home late and go to the gym.

**[2 marks]**

Answer _____

**(d)**    Next year Darcey will work 225 days.

She only goes to the gym on a work day.

Estimate the number of times Darcey will go to the gym next year.

**[4 marks]**

Answer _____

**8.** June/2021/Paper_2H/No.1

Amy collected data about the number of pups born in guinea pig litters.

The data are given below.

| 2 | 4 | 5 | 8 | 6 | 6 | 4 | 3 | 4 |

Use the data to estimate the probability that her guinea pig 'Caramel' will have 6 pups in her litter.

Circle your answer.

**[1 mark]**

$$\frac{1}{9} \qquad\qquad \frac{2}{9} \qquad\qquad \frac{2}{7} \qquad\qquad 2$$
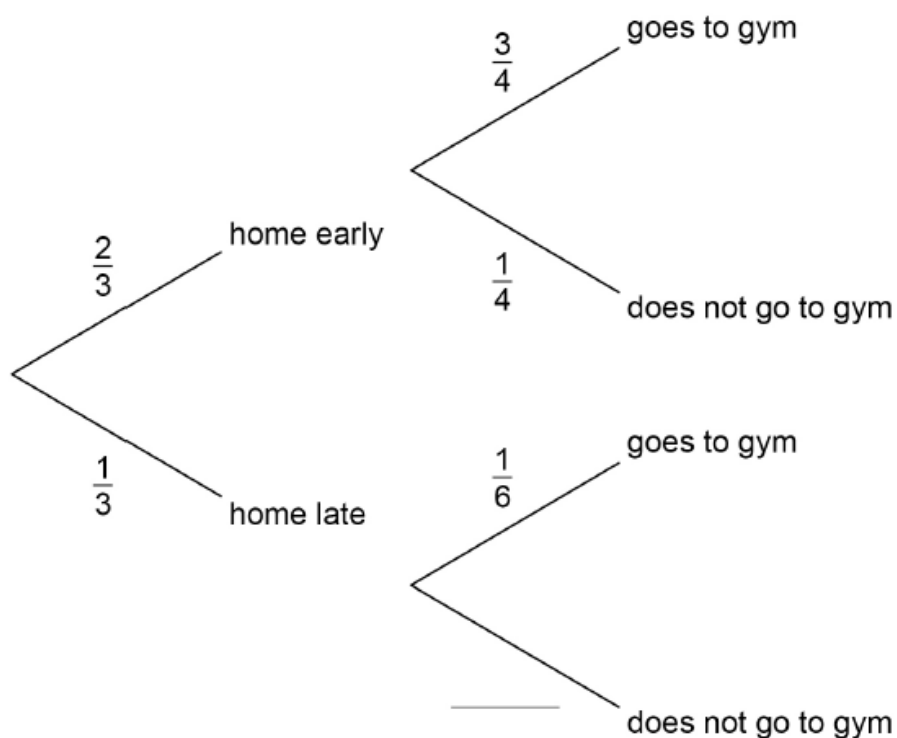
**9.** June/2021/Paper_2H/No.9

Darcey sometimes goes to the gym after work.

The probability of going to the gym is affected by whether she arrives home early or late.

The probabilities are shown in the tree diagram.



**(a)** Write the missing probability on the tree diagram.

**[1 mark]**

**(b)** What does the probability of $\frac{3}{4}$ represent in this context?

**[1 mark]**

**(c)** Calculate the probability that, on a randomly chosen work day, Darcey will get home late and go to the gym.

**[2 marks]**

_____

_____

Answer _____

**(d)** Next year Darcey will work 225 days.

She only goes to the gym on a work day.

Estimate the number of times Darcey will go to the gym next year.

**[4 marks]**

_____

_____

_____

_____

_____

_____

Answer _____

8

**10.** June/2021/Paper_2H/No.14

England will play Australia in five cricket matches.

Before each match the England captain tosses a coin.

The Australian captain calls 'Heads' or 'Tails' and whoever wins the toss chooses to bat or bowl first.

**(a)** Work out the **exact** probability that the same captain wins all five tosses.

**[2 marks]**

_____

_____

_____

_____

_____

Answer _____

**(b)** Give **two** reasons why the number of times out of five that the Australian captain wins the toss can be modelled by a Binomial distribution.

**[2 marks]**

1 _____

_____

2 _____

_____

9