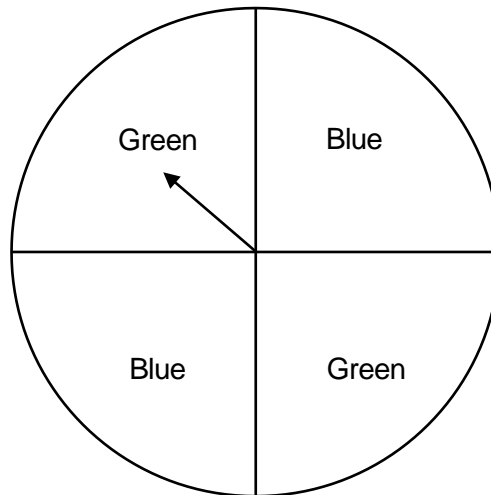Name: _____

BennettMaths AQA 3H – Part 2

12 Here is a **biased** spinner.

12 (a) Ann, Bill and Celine want to know the probability of spinning blue on the biased spinner.

They each spin it and count how many times it lands on blue and divide by the total number of spins.

Ann says   I spun blue the most times

Bill says   I spun the spinner the most times

Celine says   My relative frequency of blue is 0.50

Who had the best estimate for the probability of spinning blue?

Give a reason for your answer.

[1 mark]

_____

_____

_____

12 (b) David spins the spinner 100 times.

He says,

"My relative frequency of blue is $\frac{1}{3}$"

Give a reason why his relative frequency must be wrong.

[1 mark]

_____

_____

_____

12 (c) Emily spins the spinner 175 times.

The relative frequency of blue is 0.64

Work out how many times the spinner landed on **green**.

[2 marks]

_____

_____

_____

_____

_____

_____

Answer _____

Turn over for the next question

4

Turn over ▶

13 Daniel is driving 154 miles to visit his aunt.

He:

- leaves at 8.15 am
- travels the first 90 miles at an average speed of 50 mph
- drives the rest of the way at an average speed of 47 mph.

Will he be at his aunt's by 11.30 am?

You **must** show your working.

[4 marks]

14 Stephanie paid Income Tax and National Insurance on her annual salary.

Income Tax

0% of the first £14 700 of her annual salary

20% of the rest of her annual salary

National Insurance

0% of the first £6500 of her annual salary

15.75% of the rest of her annual salary

Stephanie paid £600 Income Tax.

How much National Insurance did she pay?
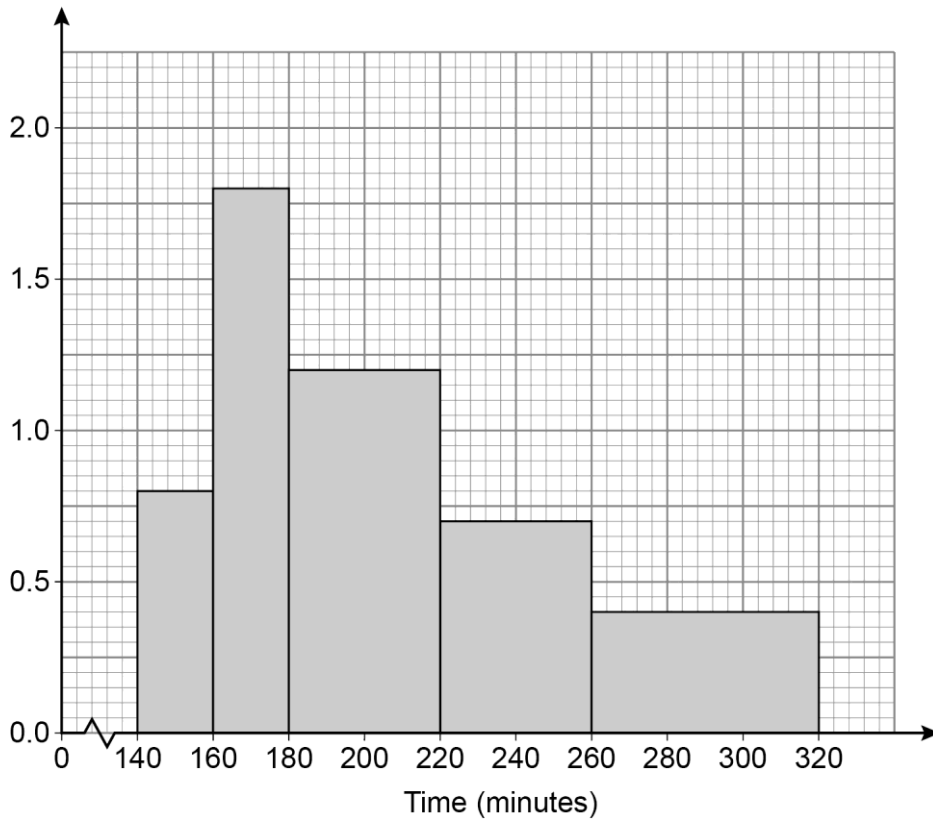
[4 marks]

Answer £ _____

Turn over ▶

15 Some runners from Coventry Running Club entered a marathon.

15 (a) The histogram represents the times of the runners from the club who completed the marathon.

48 runners finished the marathon between 260 and 320 minutes.

How many runners finished in under 220 minutes?
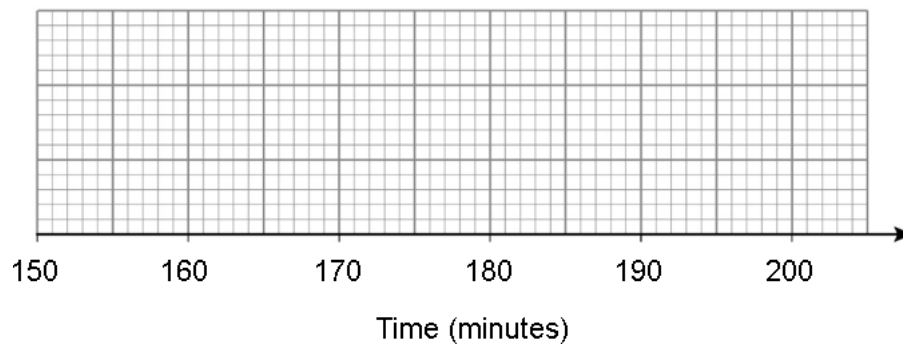
[3 marks]

Answer _____

15 (b) The table shows information about the runners who completed the marathon from Leicester Running Club.

	Time (minutes)
Least time	150
Greatest time	200
Lower quartile	163
Median	172
Interquartile range	24

Draw a box plot to represent the information.

[3 marks]

Time (minutes)

Turn over for the next question

6

Turn over ▶

16

Not drawn accurately

In this right-angled triangle,

$c = 39$ cm

$c : a = 13 : 5$

Work out the area of the triangle.

[4 marks]

Answer _____ cm^2

17 Solve $\dfrac{x-4}{3} + \dfrac{10-x}{4} = 1$

[4 marks]

$x = $ _____

Turn over for the next question

8

Turn over ▶