



F03-30min Risk (Foundation): 30-minute Pack

EDEXCEL 1ST0 · Calculator allowed · about 30 minutes

Total Marks

Name: _____ Date: ____ / ____ / ____

Answer ALL questions. Show all your working.

- 1** A theme park ride has a risk of a technical fault of 1 in 50. Write down this risk as a decimal.

(Total for Question 1 is 1 mark)

- 2** A charity states the risk of a rare genetic condition is 2 in 500. Write down this risk as a percentage.

(Total for Question 2 is 1 mark)

- 3** Write down whether this statement is True or False.
A risk of 1 in 10 is higher than a risk of 1 in 20.

(Total for Question 3 is 1 mark)

- 4** A school reports the risk of a student being absent on any given day as 1 in 20. Out of 900 students, work out the expected number absent on a given day.

(Total for Question 4 is 2 marks)

- 5** A factory reports the risk of a faulty item on Production Line A as 3 in 150. Write down this risk in its simplest 'x in y' form.

(Total for Question 5 is 2 marks)

- 6** A car insurance company states the risk of a claim being made on a policy in a year is 1 in 15. Out of 3000 policyholders, work out the expected number who will make a claim.

(Total for Question 6 is 2 marks)

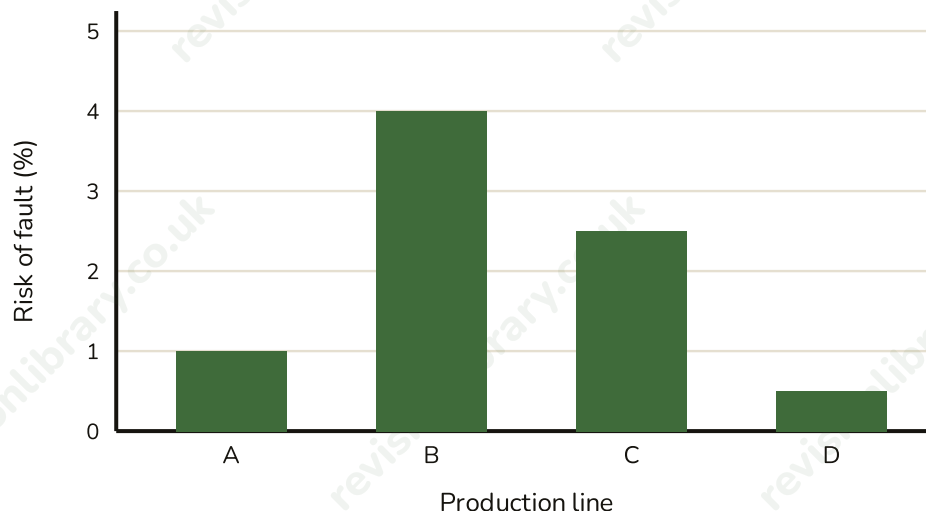
- 7** A vaccine trial found that 1 in 250 participants experienced a mild side effect. Out of 12,500 participants, work out the expected number who experienced this side effect.

(Total for Question 7 is 2 marks)

- 8** A batch of 4000 light bulbs has a risk of being faulty of 1 in 80. Work out the expected number of faulty bulbs in the batch.

(Total for Question 8 is 2 marks)

- 9** The bar chart shows the risk of a manufacturing fault, as a percentage, on four production lines at a factory.



- (a) Write down the risk of a fault on production line C. (1)

.....

- (b) Write down which production line has the lowest risk of a fault. (1)

.....

- (c) Production line B makes 6000 items per day. Work out the number of faulty items expected per day on production line B. (2)

.....

- (d) Production line A makes 15000 items per day. Work out the number of faulty items expected per day on production line A. (2)

.....

(Total for Question 9 is 6 marks)

10 Three smoke alarms state their risk of failure over 10 years in different forms:

Alarm X: risk of failure = 1 in 50

Alarm Y: risk of failure = 3%

Alarm Z: risk of failure = $\frac{1}{20}$

(a) Write the risk of Alarm Y as a fraction in its simplest form. (1)

(b) Write the risk of Alarm X as a percentage. (1)

(c) Write the risk of Alarm Z as a percentage. (1)

(d) Put the three alarms in order of risk of failure, from lowest to highest. (2)

(Total for Question 10 is 5 marks)

11 An insurance company states that the risk of a claim being made on a car policy in a year is 1 in 15.

(a) Write this risk as a fraction. (1)

(b) Write this risk as a decimal, correct to 3 decimal places. (1)

(c) Write this risk as a percentage, correct to 1 decimal place. (1)

(d) The company insures 4500 cars. Work out an estimate for the number of claims expected in a year. (2)

(Total for Question 11 is 5 marks)

Mark scheme • F03-30min Risk (Foundation): 30-minute Pack

Question 1

- **B1** 0.02 cao
- **Answer: 0.02**

Question 2

- **B1** 0.4% cao
- **Answer: 0.4%**

Question 3

- **B1** True cao
- **Answer: True**

Question 4

- **M1** 900 / 20 oe
- **A1** 45 cao
- **Answer: 45**

Question 5

- **M1** divides both parts by a common factor, e.g. 3 oe
- **A1** 1 in 50 cao
- **Answer: 1 in 50**

Question 6

- **M1** 3000 / 15 oe
- **A1** 200 cao
- **Answer: 200**

Question 7

- **M1** 12500 / 250 oe
- **A1** 50 cao
- **Answer: 50**

Question 8

- **M1** 4000 / 80 oe
- **A1** 50 cao
- **Answer: 50**

Question 9

- (a) **B1** 2.5% cao
- (a) **Answer: 2.5%**
- (b) **B1** D cao
- (b) **Answer: D**
- (c) **M1** 6000 x 0.04, oe
- (c) **A1** 240 cao
- (c) **Answer: 240**
- (d) **M1** 15000 x 0.01, oe
- (d) **A1** 150 cao
- (d) **Answer: 150**

Question 10

- (a) **B1** $\frac{3}{100}$ cao
- (a) **Answer: $\frac{3}{100}$**
- (b) **B1** 2% cao
- (b) **Answer: 2%**
- (c) **B1** 5% cao
- (c) **Answer: 5%**
- (d) **M1** all three risks compared as percentages (2%, 3%, 5%), oe
- (d) **A1** X, Y, Z cao (in that order)
- (d) **Answer: X, Y, Z**

Question 11

- (a) **B1** $\frac{1}{15}$ cao
- (a) **Answer: $\frac{1}{15}$**
- (b) **B1** 0.067 awrt
- (b) **Answer: 0.067**
- (c) **B1** 6.7% awrt
- (c) **Answer: 6.7%**
- (d) **M1** 4500 divided by 15, oe
- (d) **A1** 300 cao
- (d) **Answer: 300**