5.3 Risk (Higher): 1-hour Pack

EDEXCEL 1ST0 · Calculator allowed · about 60 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 In a study of workers, 16 of 500 people who worked outdoors developed a cough, and 47 of 1000 people who worked indoors developed a cough. Work out the relative risk (risk for those who worked outdoors divided by risk for those who worked indoors). Give your answer to 2 decimal places. Say what the answer tells you.

(Total for Question 1 is 3 marks)

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2 Two surveys estimate the proportion of students in a school who cycle. Survey A: 18 of 20 cycle. Survey B: 227 of 250 cycle.
(a) Work out the proportion who cycle in each survey as a percentage, to 1 decimal place if needed.
(b) Which survey is likely to give the more reliable estimate, and why?

(Total for Question 2 is 4 marks)

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3 In a vaccine trial, 32 of 2000 people who vaccinated caught the illness. A town has 10000 people who vaccinated. Estimate how many would be expected to have caught the illness. Give your answer to the nearest whole number.

(Total for Question 3 is 2 marks)

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4 In a study of workers, 60 of 2000 people who worked outdoors developed a cough. A town has 10000 people who worked outdoors. Estimate how many would be expected to have developed a cough. Give your answer to the nearest whole number.

(Total for Question 4 is 2 marks)

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5 A random sample of 100 students in a school was taken. 10 of them read a paper. There are 4000 students in the school altogether. Estimate the number of students in the school who read a paper. Give your answer to the nearest whole number.

(Total for Question 5 is 3 marks)

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6 In a vaccine trial, 3 of 1000 people who vaccinated caught the illness, and 14 of 1000 people who not vaccinated caught the illness. Work out the relative risk (risk for those who vaccinated divided by risk for those who not vaccinated). Give your answer to 2 decimal places. Say what the answer tells you.

(Total for Question 6 is 3 marks)

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7 In a study of workers, 66 of 2000 people who worked outdoors developed a cough, and 8 of 1000 people who worked indoors developed a cough.
(a) Work out the absolute risk for the people who worked outdoors, as a decimal.
(b) Write the risk for the people who worked indoors as 'x in 1000' (use 1 decimal place if needed).

(Total for Question 7 is 4 marks)

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8 Two surveys estimate the proportion of residents of a town who cycle. Survey A: 17 of 25 cycle. Survey B: 70 of 100 cycle.

(a) Work out the proportion who cycle in each survey as a percentage, to 1 decimal place if needed.

(b) Which survey is likely to give the more reliable estimate, and why?

(Total for Question 8 is 4 marks)

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9 In a study of workers, 44 of 2000 people who worked outdoors developed a cough, and 53 of 1000 people who worked indoors developed a cough.

(a) Work out the absolute risk for the people who worked outdoors, as a decimal.

(b) Write the risk for the people who worked indoors as 'x in 1000' (use 1 decimal place if needed).

(Total for Question 9 is 4 marks)

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10 In a trial of a new medicine, 58 of 2000 people who took the medicine had side effects, and 55 of 1000 people who took the placebo had side effects. Work out the relative risk (risk for those who took the medicine divided by risk for those who took the placebo). Give your answer to 2 decimal places. Say what the answer tells you.

(Total for Question 10 is 3 marks)

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11 In a study of workers, 36 of 2000 people who worked outdoors developed a cough. A town has 5000 people who worked outdoors. Estimate how many would be expected to have developed a cough. Give your answer to the nearest whole number.

(Total for Question 11 is 2 marks)

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12 In a study of workers, 12 of 500 people who worked outdoors developed a cough, and 6 of 1000 people who worked indoors developed a cough.

(a) Work out the absolute risk for the people who worked outdoors, as a decimal.

(b) Write the risk for the people who worked indoors as 'x in 1000' (use 1 decimal place if needed).

(Total for Question 12 is 4 marks)

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13 A random sample of 50 students in a school was taken. 17 of them have a library card. There are 5000 students in the school altogether. Estimate the number of students in the school who have a library card. Give your answer to the nearest whole number.

(Total for Question 13 is 3 marks)

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14 In a study of a seatbelt campaign, 12 of 400 people who wore seat belts were injured, and 24 of 2000 people who did not wear seat belts were injured.
(a) Work out the absolute risk for the people who wore seat belts, as a decimal.
(b) Write the risk for the people who did not wear seat belts as 'x in 1000' (use 1 decimal place if needed).

(Total for Question 14 is 4 marks)

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15 In a study of workers, 18 of 500 people who worked outdoors developed a cough, and 50 of 1000 people who worked indoors developed a cough.
(a) Work out the absolute risk for the people who worked outdoors, as a decimal.
(b) Write the risk for the people who worked indoors as 'x in 1000' (use 1 decimal place if needed).

(Total for Question 15 is 4 marks)

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16 A random sample of 10 of the 400 parcels sent by a firm last week had a mean mass of 34 kg. Estimate the total mass of all 400 parcels.

(Total for Question 16 is 2 marks)

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17 In a study of workers, 30 of 1000 people who worked outdoors developed a cough, and 18 of 400 people who worked indoors developed a cough.
(a) Work out the absolute risk for the people who worked outdoors, as a decimal.
(b) Write the risk for the people who worked indoors as 'x in 1000' (use 1 decimal place if needed).

(Total for Question 17 is 4 marks)

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18 In a vaccine trial, 24 of 2000 people who vaccinated caught the illness, and 108 of 2000 people who not vaccinated caught the illness. Work out the relative risk (risk for those who vaccinated divided by risk for those who not vaccinated). Give your answer to 2 decimal places. Say what the answer tells you.

(Total for Question 18 is 3 marks)

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Mark scheme · 5.3 Risk (Higher): 1-hour Pack

Question 1

16/500 divided by 47/1000	M1
0.68 cao	A1
risk is lower for those who worked outdoors	B1

Answer: 0.68; risk is lower for those who worked outdoors

Question 2

18/20 x 100 or 227/250 x 100	M1
90% and 90.8% cao	A1
Survey B	B1
it has a larger sample (250 compared with 20)	B1

Answer: (a) 90% and 90.8%; (b) Survey B, larger sample

Question 3

32/2000 x 10000	M1
160 cao	A1

Answer: 160

Question 4

60/2000 x 10000	M1
300 cao	A1

Answer: 300

Question 5

10/100	M1
1/10 x 4000	M1
400 cao	A1

Answer: 400

Question 6

3/1000 divided by 14/1000	M1
0.21 cao	A1
risk is lower for those who vaccinated	B1

Answer: 0.21; risk is lower for those who vaccinated

Question 7

66/2000	M1
0.033 cao	A1
8/1000 x 1000	M1
8 in 1000 cao	A1

Answer: (a) 0.033; (b) 8 in 1000

Question 8

17/25 x 100 or 70/100 x 100	M1
68% and 70% cao	A1
Survey B	B1
it has a larger sample (100 compared with 25)	B1

Answer: (a) 68% and 70%; (b) Survey B, larger sample

Question 9

44/2000	M1
0.022 cao	A1
53/1000 x 1000	M1
53 in 1000 cao	A1

Answer: (a) 0.022; (b) 53 in 1000

Question 10

58/2000 divided by 55/1000	M1
0.53 cao	A1
risk is lower for those who took the medicine	B1

Answer: 0.53; risk is lower for those who took the medicine

Question 11

36/2000 x 5000	M1
90 cao	A1

Answer: 90

Question 12

12/500	M1
0.024 cao	A1
6/1000 x 1000	M1
6 in 1000 cao	A1

Answer: (a) 0.024; (b) 6 in 1000

Question 13

17/50	M1
17/50 x 5000	M1
1700 cao	A1

Answer: 1700

Question 14

12/400	M1
0.03 cao	A1
24/2000 x 1000	M1
12 in 1000 cao	A1

Answer: (a) 0.03; (b) 12 in 1000

Question 15

18/500	M1
0.036 cao	A1
50/1000 x 1000	M1
50 in 1000 cao	A1

Answer: (a) 0.036; (b) 50 in 1000

Question 16

400 x 34	M1
13600 kg cao	A1

Answer: 13600 kg

Question 17

30/1000	M1
0.03 cao	A1
18/400 x 1000	M1
45 in 1000 cao	A1

Answer: (a) 0.03; (b) 45 in 1000

Question 18

24/2000 divided by 108/2000	M1
0.22 cao	A1
risk is lower for those who vaccinated	B1

Answer: 0.22; risk is lower for those who vaccinated

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