3.3 Estimating: 1-hour Pack

EDEXCEL 1MA1 · Calculator allowed · about 60 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Estimate the value of (0.741 x 497) / 35.8
You must show your rounding.

(Total for Question 1 is 3 marks)

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2 A school buys 51 notebooks. Each one costs £9.07.
(a) Estimate the total cost by rounding each number to 1 significant figure.
(b) State whether your estimate is an over-estimate or an under-estimate. Give a reason.

(Total for Question 2 is 3 marks)

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3 Estimate the value of $\sqrt{6.37 \times 6.36}$
You must show your rounding.

(Total for Question 3 is 3 marks)

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4 A school buys 41 t-shirts. Each one costs £5.02.

(a) Estimate the total cost by rounding each number to 1 significant figure.

(b) State whether your estimate is an over-estimate or an under-estimate. Give a reason.

(Total for Question 4 is 3 marks)

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5 Estimate the value of (4.02 x 8.85) / 0.301

You must show your rounding.

(Total for Question 5 is 3 marks)

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6 A school buys 56 bags of compost. Each one costs £1.84.

(a) Estimate the total cost by rounding each number to 1 significant figure.

(b) State whether your estimate is an over-estimate or an under-estimate. Give a reason.

(Total for Question 6 is 3 marks)

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7 Estimate the value of (0.617 x 5.84) / 7.79

You must show your rounding.

(Total for Question 7 is 3 marks)

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8 A school buys 93 bags of compost. Each one costs £2.26.

(a) Estimate the total cost by rounding each number to 1 significant figure.

(b) State whether your estimate is an over-estimate or an under-estimate. Give a reason.

(Total for Question 8 is 3 marks)

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9 Estimate the value of $\sqrt{685 \times 736}$

You must show your rounding.

(Total for Question 9 is 3 marks)

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10 Estimate the value of $(76.6 \times 6.43) / 0.496$

You must show your rounding.

(Total for Question 10 is 3 marks)

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11 A school buys 41 notebooks. Each one costs £5.15.

(a) Estimate the total cost by rounding each number to 1 significant figure.

(b) State whether your estimate is an over-estimate or an under-estimate. Give a reason.

(Total for Question 11 is 3 marks)

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12 A school buys 32 tickets. Each one costs £8.22.

(a) Estimate the total cost by rounding each number to 1 significant figure.

(b) State whether your estimate is an over-estimate or an under-estimate. Give a reason.

(Total for Question 12 is 3 marks)

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13 Estimate the value of $\sqrt{79.6 \times 19.8}$

You must show your rounding.

(Total for Question 13 is 3 marks)

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14 Estimate the value of $\sqrt{0.171 \times 81.1}$

You must show your rounding.

(Total for Question 14 is 3 marks)

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15 By rounding each number to 1 significant figure, work out an estimate for 5187 / 51

(Total for Question 15 is 2 marks)

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16 Put a ring around the best estimate for $\sqrt{83}$

- ☐ A) 8
- ☐ B) 9
- ☐ C) 10
- ☐ D) 7

(Total for Question 16 is 1 mark)

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Mark scheme · 3.3 Estimating: 1-hour Pack

Question 1

rounds each number to 1 significant figure	**M1**
correct calculation with rounded values	**M1**
8.75 cao	**A1**

Answer: 8.75

Question 2

rounds both values to 1 significant figure	**M1**
£450	**A1**
under-estimate because both numbers were rounded down	**B1**

Answer: £450, under-estimate

Question 3

rounds both numbers to 1 significant figure	**M1**
product 36	**M1**
6 cao	**A1**

Answer: 6

Question 4

rounds both values to 1 significant figure	**M1**
£200	**A1**
under-estimate because both numbers were rounded down	**B1**

Answer: £200, under-estimate

Question 5

rounds each number to 1 significant figure	**M1**
correct calculation with rounded values	**M1**
120 cao	**A1**

Answer: 120

Question 6

rounds both values to 1 significant figure	**M1**
£120	**A1**
over-estimate because both numbers were rounded up	**B1**

Answer: £120, over-estimate

Question 7

rounds each number to 1 significant figure	**M1**
correct calculation with rounded values	**M1**
0.45 cao	**A1**

Answer: 0.45

Question 8

rounds both values to 1 significant figure	**M1**
£180	**A1**
under-estimate because both numbers were rounded down	**B1**

Answer: £180, under-estimate

Question 9

rounds both numbers to 1 significant figure	**M1**
product 490000	**M1**
700 cao	**A1**

Answer: 700

Question 10

rounds each number to 1 significant figure	**M1**
correct calculation with rounded values	**M1**
960 cao	**A1**

Answer: 960

Question 11

rounds both values to 1 significant figure	**M1**
£200	**A1**
under-estimate because both numbers were rounded down	**B1**

Answer: £200, under-estimate

Question 12

rounds both values to 1 significant figure	**M1**
£240	**A1**
under-estimate because both numbers were rounded down	**B1**

Answer: £240, under-estimate

Question 13

rounds both numbers to 1 significant figure	**M1**
product 1600	**M1**
40 cao	**A1**

Answer: 40

Question 14

rounds both numbers to 1 significant figure	**M1**
product 16	**M1**
4 cao	**A1**

Answer: 4

Question 15

rounding both values to 1 sf, 5000 and 50	**M1**
100 cao	**A1**

Answer: 100

Question 16

B ($9^2 = 81$ is close to 83)	**B1**

Answer: B) 9

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