2.2 Using a Calculator: 30-minute Pack

EDEXCEL 1MA1 · Calculator allowed · about 30 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Work out 6^2 - 3.5 x 4

(Total for Question 1 is 1 mark)

2 Work out 35% of 260

(Total for Question 2 is 1 mark)

3 Work out the value of $\sqrt{169}$ x 2^3

(Total for Question 3 is 2 marks)

4 Work out the value of 5^{-3}

(Total for Question 4 is 1 mark)

5 Work out 18 + 27.

(Total for Question 5 is 1 mark)

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6 Work out 9^2 - 12.

(Total for Question 6 is 1 mark)

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7 Work out 6 × (5 + 3).

(Total for Question 7 is 1 mark)

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8 Amelia cycles 18 miles in 2.4 hours.

(a) Work out her average speed in miles per hour. **(2)**

(b) Write 2.4 hours in hours and minutes. **(2)**

(Total for Question 8 is 4 marks)

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9 Use your calculator to work out the value of 3.4 x 6.6 + 7.4 x 5.1. Write down all the figures on your calculator display, then give your answer correct to 3 significant figures.

(Total for Question 9 is 2 marks)

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10 A ticketing system recorded 24867.4 people at a football match. Round this number to 2 significant figures.

(Total for Question 10 is 1 mark)

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11 A supermarket sells orange juice in two sizes:
Small bottle: 750 ml for £1.65
Large bottle: 2 litres for £3.96
Work out which bottle is the better value for money. You must show working to support your answer.

(Total for Question 11 is 4 marks)

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12 Show that $(5 + 2\sqrt{3})(5 - 2\sqrt{3}) = 13$. Hence use your calculator to find the value of $1/(5 - 2\sqrt{3})$, giving your answer correct to 3 significant figures.

(Total for Question 12 is 4 marks)

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Mark scheme · 2.2 Using a Calculator: 30-minute Pack

A correct answer earns full marks unless the question asks for working, a method, proof or explanation.

Question 1

22 cao **B1**

Answer: 22

Question 2

91 cao **B1**

Answer: 91

Question 3

13 or 8 seen **M1**

104 cao **A1**

Answer: 104

Question 4

0.008 oe cao **B1**

Answer: 0.008

Question 5

45 cao **B1**

Answer: 45

Question 6

69 cao **B1**

Answer: 69

Question 7

48 cao **B1**

Answer: 48

Question 8

(a) 18/2.4 seen or correct process **M1**

(a) 7.5 cao (mph) **A1**

(a) Answer: 7.5 mph

(b) 0.4 x 60 (=24) seen or correct process **M1**

(b) 2 hours 24 minutes cao **A1**

(b) Answer: 2 hours 24 minutes

Question 9

60.18 or better seen **B1**

60.2 cao **B1**

Answer: 60.2

Question 10

25000 cao **B1**

Answer: 25000

Question 11

cost per 100 ml (or per litre/ml) for the small bottle found, e.g. £0.22 per 100 ml **M1**

cost per 100 ml (or per litre/ml) for the large bottle found, e.g. £0.198 per 100 ml **M1**

correct numerical comparison shown (0.198 < 0.22) **A1**

correct conclusion with reason: large bottle, since it costs less per ml, oe **C1**

Answer: Large bottle (2 litres for £3.96) is better value

Question 12

use $(a - b)(a + b) = a^2 - b^2$ with $a = 5$, $b = 2\sqrt{3}$ (cso) **M1**

evaluate $a^2 - b^2 = 25 - 12 = 13$ (cso) **M1**

rationalise, or use calculator to evaluate $1/(5 - 2\sqrt{3}) = (5 + 2\sqrt{3})/13$ oe **M1**

0.651 awrt 3 s.f. cao **A1**

Answer: 0.651

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