3.7 Percentages: 1-hour Pack

EDEXCEL 1MA1 · Calculator allowed · about 60 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Work out 60% of 360.

(Total for Question 1 is 2 marks)

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2 A shop reduces the price of a jacket from £60 by 30% in a sale. VAT at 20% is then added to the sale price.
Work out the final price of the jacket.

(Total for Question 2 is 3 marks)

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3 The price of a bike is £80.
Increase the price by 4%.

(Total for Question 3 is 2 marks)

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4 Express 20 out of 50 as a percentage.

(Total for Question 4 is 2 marks)

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5 A shop reduces the price of a jacket from £240 by 40% in a sale. VAT at 20% is then added to the sale price.
Work out the final price of the jacket.

(Total for Question 5 is 3 marks)

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6 (Non-calculator) Work out 17.5% of 240.

(Total for Question 6 is 3 marks)

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7 Work out 17.5% of £40.

(Total for Question 7 is 2 marks)

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8 The price of a bike is £200.
Increase the price by 15%.

(Total for Question 8 is 2 marks)

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9 A shop reduces the price of a jacket from £200 by 30% in a sale. VAT at 20% is then added to the sale price.
Work out the final price of the jacket.

(Total for Question 9 is 3 marks)

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10 Which is greater, 30% of 40 or 15% of 160?
You must show your working.

(Total for Question 10 is 3 marks)

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11 Which is greater, 25% of 250 or 15% of 250?
You must show your working.

(Total for Question 11 is 3 marks)

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12 Work out 23% of £560.

(Total for Question 12 is 2 marks)

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13 In a class of 25 students, 17 are right-handed. Work out the percentage of the class that is right-handed.

(Total for Question 13 is 2 marks)

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14 (Non-calculator) A jacket costs £80. In a sale, the price is reduced by 15%.

(a) Work out the sale price of the jacket. **(3)**

(Total for Question 14 is 3 marks)

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15 Work out 12% of £450.

(Total for Question 15 is 2 marks)

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16 A student scored 18 out of 24 on a test. Work out the percentage score correct to the nearest whole percent.

(Total for Question 16 is 2 marks)

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17 A shop increases the price of a coat by 20%. In a later sale, it reduces the new price by 20%. A customer says:
"The price is now back to what it started at, because a 20% increase and a 20% decrease cancel each other out."

(a) Using a starting price of £50, show that the customer is wrong and explain why. **(3)**

(Total for Question 17 is 3 marks)

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18 A laptop is on sale at 15% off the marked price. After the sale the shop increases the sale price by 10% to return nearer to the original price. If the final price is £810, find the original marked price. Give your answer to the nearest penny.

(Total for Question 18 is 5 marks)

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Mark scheme · 3.7 Percentages: 1-hour Pack

Question 1

60 / 100 x 360 or 10% method	M1
216	A1

Answer: 216

Question 2

sale price £42.00	M1
£42.00 x 1.2 or adds 20%	M1
£50.40	A1

Answer: £50.40

Question 3

80 x 1.04 or 4% of 80 found	M1
£83.20	A1

Answer: £83.20

Question 4

20 / 50 x 100	M1
40%	A1

Answer: 40%

Question 5

sale price £144.00	M1
£144.00 x 1.2 or adds 20%	M1
£172.80	A1

Answer: £172.80

Question 6

10% of 240 = 24	M1
5% = 12 and 2.5% = 6 (oe building blocks)	M1
42	A1

Answer: 42

Question 7

17.5 / 100 x 40 or 10% method	M1
£7.00	A1

Answer: £7.00

Question 8

200 x 1.15 or 15% of 200 found	M1
£230.00	A1

Answer: £230.00

Question 9

sale price £140.00	M1
£140.00 x 1.2 or adds 20%	M1
£168.00	A1

Answer: £168.00

Question 10

12 found	M1
24 found	M1
15% of 160 is greater	A1

Answer: 15% of 160

Question 11

62.5 found	M1
37.5 found	M1
25% of 250 is greater	A1

Answer: 25% of 250

Question 12

0.23 x 560 (oe)	M1
128.80 (pounds)	A1

Answer: £128.80

Question 13

17/25 x 100 (oe)	M1
68%	A1

Answer: 68%

Question 14

(a) 15% of 80: 10% = 8 and 5% = 4 (oe), so reduction = 12	M1
(a) 80 - 12 (oe)	M1
(a) 68 (pounds)	A1

(a) Answer: £68

Question 15

0.12 x 450 (oe)	M1
54 (pounds)	A1

Answer: £54

Question 16

find (18/24) x 100 or show (18/24) x 100	M1
75% cao (to nearest whole percent)	A1

Answer: 75%

Question 17

(a) after increase: 50 x 1.2 = 60 (pounds)	M1
(a) after decrease: 60 x 0.8 = 48 (pounds)	M1
(a) final price is £48, not 50; the 20% decrease is taken from the larger £60, not the original £50	C1

(a) Answer: Final price £48 (not 50); the decrease is of a larger amount

Question 18

express sale price as 0.85 P where P is original price	M1
final price after 10% increase is 0.85 P x 1.10 = 0.935 P	M1
set 0.935 P = 810 and form equation P = 810 / 0.935	M1
calculate P = 866.309523... or equivalent	M1
866.31 to nearest penny cao	A1

Answer: 866.31

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