2.4 Fractions of an Amount: 2-hour Pack

EDEXCEL 1MA1 · Calculator allowed · about 120 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Work out 2/3 of 27.

(Total for Question 1 is 2 marks)

2 Work out 3/4 of 52.

(Total for Question 2 is 2 marks)

3 A minibus can carry 45 passengers. On a school trip, 4/9 of the seats are taken by Year 8 pupils. Work out the number of Year 8 pupils on the minibus.

(Total for Question 3 is 2 marks)

4 Megan has £18 and Noah has £30. They put their money together and donate 2/3 of the total to a charity box. Work out how much money is donated to the charity box.

(Total for Question 4 is 3 marks)

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5 In Year 10, 3/8 of the students play football and 2/5 of the students play netball. There are 120 students in Year 10. Work out how many more students play netball than play football.

(Total for Question 5 is 3 marks)

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6 A spring stretches to 7/4 of its original length when a weight is attached. The original length of the spring was 32 cm.

(a) Work out the stretched length of the spring. **(2)**

.....

(b) Work out the increase in the length of the spring. **(1)**

.....

(Total for Question 6 is 3 marks)

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7 Work out 5/6 of 54.

(Total for Question 7 is 2 marks)

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8 Work out 2/7 of 63.

(Total for Question 8 is 2 marks)

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9 Work out 3/8 of £64. Give your answer in pounds.

(Total for Question 9 is 1 mark)

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10 Work out 5/6 of 18.

(Total for Question 10 is 1 mark)

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11 Work out 7/20 of £140. Give your answer in pounds.

(Total for Question 11 is 1 mark)

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12 Work out 11/15 of 105.

(Total for Question 12 is 1 mark)

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13 In a sale, a shop reduces the price of a jacket by 1/4. The original price of the jacket was £68. Work out the sale price of the jacket.

(Total for Question 13 is 3 marks)

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14 A prize fund of £900 is shared between three winners of a raffle: Aaliyah, Ben and Chidi. Aaliyah receives 1/3 of the fund. Ben receives 2/5 of the fund. Work out how much money Chidi receives.

(Total for Question 14 is 4 marks)

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15 Tyler wants to buy a pair of trainers priced at £45 in both Shop A and Shop B. Shop A takes 1/5 off the price in a sale. Shop B takes 1/3 off the price in a sale. Work out which shop offers the cheaper price for the trainers, and by how much.

(Total for Question 15 is 4 marks)

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16 The table shows the weekly pocket money for three children and the fraction of it that each child saves each week.

Child	Weekly pocket money	Fraction saved
Leah	£16	1/4
Dev	£15	2/5
Sofia	£24	5/8

Work out which child saves the greatest amount of money each week. You must show your working to support your answer.

(Total for Question 16 is 4 marks)

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17 Callum spent 2/5 of his savings on a bicycle and had £54 left.

(a) Work out Callum's original savings. **(3)**

.....

(b) Work out how much Callum spent on the bicycle. **(1)**

.....

(Total for Question 17 is 4 marks)

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18 A school trip costs £256 per student at full price. Students who book early pay only 5/8 of the full cost. Zainab books early. Her parents pay 3/4 of Zainab's early-booking cost, and Zainab pays the rest from her own savings. Work out how much Zainab pays from her own savings.

(Total for Question 18 is 4 marks)

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19 A school received 48 new pens. Three quarters of the pens were given to Year 7. How many pens did Year 7 receive?

(Total for Question 19 is 2 marks)

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20 A recipe needs 2/5 of 400 g of sugar. Work out how many grams of sugar are needed.

(Total for Question 20 is 2 marks)

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21 Priya ate 2/5 of a cake. The part she ate weighed 160 g. Work out the weight of the whole cake in grams.

(Total for Question 21 is 2 marks)

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22 A gardener planted 72 bulbs in her allotment. Five ninths of the bulbs were tulips. Work out how many tulips she planted.

(Total for Question 22 is 2 marks)

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23 A camera now costs £216 after a reduction to 3/5 of its original price. Work out the original price of the camera.

(Total for Question 23 is 3 marks)

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24 A 5-litre jug is used as follows. First 2/5 of the jug is poured away. Then 1/4 of the remaining liquid is poured away. Work out how many litres remain in the jug.

(Total for Question 24 is 3 marks)

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25 Box A holds 3/4 of 48 toy cars. Box B holds 5/6 of 42 toy cars. Which box holds more cars? Work out how many more cars it holds.

(Total for Question 25 is 3 marks)

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26 The table shows the number of apples picked at three orchards and the fraction of each orchard's apples that were sold at a farmers' market.

Orchard	Apples picked	Fraction sold at market
Ashcroft Farm	96	3/8
Bramble Hill	105	2/5
Cedar Grove	90	7/9

Work out which orchard sold the most apples at the market. You must show your working to support your answer.

(Total for Question 26 is 4 marks)

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27 A tin contains 40 litres of paint. Aisha uses 3/8 of the paint to paint a fence. Of the paint she uses on the fence, 2/5 is white paint and the rest is blue paint. Work out how many litres of blue paint Aisha uses on the fence.

(Total for Question 27 is 3 marks)

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28 A tailor has two rolls of fabric. Roll A is 90 m long and 5/6 of it has been used. Roll B is 84 m long and 7/12 of it has been used. Work out which roll has more fabric remaining, and by how many metres.

(Total for Question 28 is 3 marks)

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29 A charity collected £420. They gave 2/7 of the money to a food bank. From the remainder they gave 3/10 to a school. Work out how much of the original money is left after these two donations.

(Total for Question 29 is 4 marks)

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30 A bakery makes 240 items one morning. Three fifths of the items are loaves of bread and the rest are pastries. The bakery sells 5/6 of the loaves of bread and 2/3 of the pastries. Work out the total number of items sold that morning.

(Total for Question 30 is 4 marks)

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31 A baker used 3/8 of his flour to make bread. He then used 5/12 of the remaining flour to make pastries. After both processes 140 kg of flour remained. Work out the original mass of flour the baker had.

(Total for Question 31 is 4 marks)

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32 A lorry's fuel tank was full at the start of a journey. On the first day, 2/5 of the fuel was used. On the second day, 3/8 of the remaining fuel was used. After both days, 45 litres of fuel were left in the tank. Work out how many litres of fuel the tank held when it was full.

(Total for Question 32 is 4 marks)

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Mark scheme · 2.4 Fractions of an Amount: 2-hour Pack

Question 1

27 / 3 = 9 oe (dividing by the denominator) **M1**

18 cao **A1**

Answer: 18

Question 2

52 / 4 = 13 oe (dividing by the denominator) **M1**

39 cao **A1**

Answer: 39

Question 3

45 / 9 = 5 oe (dividing by the denominator) **M1**

20 cao **A1**

Answer: 20

Question 4

18 + 30 = 48 oe (the total amount of money) **M1**

48 / 3 = 16 oe (dep, dividing by the denominator) **M1**

32 (pounds) cao **A1**

Answer: £32

Question 5

120 / 8 = 15, 15 x 3 = 45 oe (the number who play football) **M1**

120 / 5 = 24, 24 x 2 = 48 oe (the number who play netball) **M1**

3 cao **A1**

Answer: 3

Question 6

(a) 32 / 4 = 8 oe (dividing by the denominator) **M1**

(a) 56 (cm) cao **A1**

(a) Answer: 56 cm

(b) 24 (cm) ft from part (a), cao **B1**

(b) Answer: 24 cm

Question 7

54 / 6 = 9 oe (dividing by the denominator) **M1**

45 cao **A1**

Answer: 45

Question 8

63 / 7 = 9 oe (dividing by the denominator) **M1**

18 cao **A1**

Answer: 18

Question 9

£24 cao **B1**

Answer: £24

Question 10

15 cao **B1**

Answer: 15

Question 11

£49 cao **B1**

Answer: £49

Question 12

77 cao **B1**

Answer: 77

Question 13

68 / 4 = 17 oe, the amount of the reduction **M1**

68 - 17 oe (dep), or equivalent method e.g. 3/4 x 68 **M1**

51 (pounds) cao **A1**

Answer: £51

Question 14

900 / 3 = 300 oe, Aaliyah's share **M1**

900 / 5 = 180, 180 x 2 = 360 oe, Ben's share **M1**

300 + 360 = 660 (dep on both previous methods) **M1**

240 (pounds) cao **A1**

Answer: £240

Question 15

45 / 5 = 9 oe, Shop A's reduction **M1**

45 - 9 = 36 oe (dep), Shop A's sale price **M1**

45 / 3 = 15, 45 - 15 = 30 oe, Shop B's sale price **M1**

cao, Shop B is cheaper, by £6 **A1**

Answer: Shop B is cheaper, by £6 (Shop A = £36, Shop B = £30).

Question 16

16 / 4 = 4 oe (Leah's savings) **M1**

15 / 5 = 3, 3 x 2 = 6 oe (Dev's savings) **M1**

24 / 8 = 3, 3 x 5 = 15 oe (Sofia's savings) **M1**

cao, Sofia saves the most, since £15 is greater than £6 and £4 **A1**

Answer: Sofia saves the most, £15 per week (Leah = £4, Dev = £6, Sofia = £15).

Question 17

(a) 1 - 2/5 = 3/5 oe (the fraction of his savings remaining) **M1**

(a) 54 / 3 = 18 oe (dep, dividing by the numerator of 3/5, to find one-fifth of his savings) **M1**

(a) 90 (pounds) cao **A1**

(a) Answer: £90

(b) 36 (pounds) ft from part (a), cao **B1**

(b) Answer: £36

Question 18

256 / 8 = 32, 32 x 5 = 160 oe (Zainab's early-booking cost) **M1**

160 / 4 = 40, 40 x 3 = 120 oe (dep, the amount Zainab's parents pay) **M1**

160 - 120 = 40 oe (dep on both previous methods) **M1**

40 (pounds) cao **A1**

Answer: £40

Question 19

correct method for 3/4 of 48, e.g. 48 x 3/4 or (48/4) x 3 **M1**

36 cao **A1**

Answer: 36

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Question 20

method: 2/5 of 400, e.g. 400 x 2/5 or (400/5) x 2	**M1**
160 g cao	**A1**

Answer: 160 g

Question 21

method: divide 160 by 2/5 or multiply by 5/2	**M1**
400 g cao	**A1**

Answer: 400 g

Question 22

72 / 9 = 8 oe (dividing by the denominator)	**M1**
40 cao	**A1**

Answer: 40

Question 23

divide £216 by 3/5 or multiply by 5/3 to find original price	**M1**
calculate 216 x 5/3 or 216 / (3/5) correctly	**M1**
£360 cao	**A1**

Answer: £360

Question 24

calculate first amount removed: 2/5 of 5 = 2 litres or find remainder 3 litres	**M1**
calculate second removal: 1/4 of 3 = 0.75 litres	**M1**
2.25 litres cao	**A1**

Answer: 2.25 litres

Question 25

calculate 3/4 of 48 = 36 or equivalent method	**M1**
calculate 5/6 of 42 = 35 or equivalent method	**M1**
Box A has 1 more car cao	**A1**

Answer: Box A, 1 more car

Question 26

96 / 8 = 12, 12 x 3 = 36 oe (Ashcroft Farm's apples sold)	**M1**
105 / 5 = 21, 21 x 2 = 42 oe (Bramble Hill's apples sold)	**M1**
90 / 9 = 10, 10 x 7 = 70 oe (Cedar Grove's apples sold)	**M1**
cao, Cedar Grove sold the most, since 70 is greater than 42 and 36	**A1**

Answer: Cedar Grove sold the most, 70 apples (Ashcroft Farm = 36, Bramble Hill = 42, Cedar Grove = 70).

Question 27

40 x 3/8 = 15 oe (litres of paint used on the fence)	**M1**
1 - 2/5 = 3/5 oe (dep, fraction of the fence paint that is blue)	**M1**
9 (litres) cao	**A1**

Answer: 9 litres

Question 28

90 / 6 = 15 oe (metres remaining on Roll A, since 1/6 of Roll A remains)	**M1**
84 / 12 = 7, 7 x 5 = 35 oe (metres remaining on Roll B, since 5/12 of Roll B remains)	**M1**
cao, Roll B has more remaining, by 20 m	**A1**

Answer: Roll B has more fabric remaining, by 20 m (Roll A = 15 m remaining, Roll B = 35 m remaining).

Question 29

calculate 2/7 of 420 = 120 or equivalent method	**M1**
subtract to find remainder: 420 - 120 = 300	**M1**
calculate 3/10 of 300 = 90	**M1**
£210 cao	**A1**

Answer: £210

Question 30

240 x 3/5 = 144 oe (loaves of bread made)	**M1**
240 - 144 = 96 oe (dep, pastries made), or 240 x 2/5 = 96 oe	**M1**
144 x 5/6 = 120 oe AND 96 x 2/3 = 64 oe (dep, loaves of bread sold and pastries sold)	**M1**
184 cao	**A1**

Answer: 184

Question 31

find remainder after bread: 1 - 3/8 = 5/8 so remainder = 5/8 x	**M1**
find amount used for pastries: 5/12 of 5/8 x = 25/96 x and subtract to get final remainder 5/8 x - 25/96 x = 35/96 x	**M1**
set up and solve 35/96 x = 140 correctly	**M1**
384 kg cao	**A1**

Answer: 384 kg

Question 32

1 - 2/5 = 3/5 oe (the fraction of the full tank remaining after day 1)	**M1**
1 - 3/8 = 5/8 oe (the fraction of day 1's remainder still left after day 2)	**M1**
3/5 x 5/8 = 3/8 oe (dep on both previous methods, the fraction of the full tank remaining after day 2), or equivalent numeric route e.g. 45 / (3/8)	**M1**
120 (litres) cao	**A1**

Answer: 120 litres

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