1.2 Number: Fractions, Decimals, Percentages: 2-hour Pack

Calculator allowed · about 120 minutes

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 A team wins 5 of its 25 matches. Write 5 out of 25 as a percentage.

(2)

2 Decrease £240 by 40%.

(2)

3 A ticket costs £120. The price rises by 40%. Work out the new price.

(2)

4 Work out 3/4 of 52.

(2)

5 Write 12/30 in its simplest form.

(1)

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6 Write these fractions in order of size, smallest first.
2/3, 1/2, 1/3

(2)

---

7 Work out 2/3 of £24.

(2)

---

8 Write these fractions in order of size, largest first.
1/2, 3/4, 2/6

(2)

---

9 Write these fractions in order of size, smallest first.
6/12, 4/5, 1/4

(2)

---

10 Write 32/40 in its simplest form.

(1)

---

11 Write 67.5% as (a) a decimal and (b) a fraction in its simplest form.

(2)

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12 Work out each answer, giving your answer as a fraction in its simplest form.

(a) Work out 2/3 x 3/5 **(2)**

.....

(b) Work out 3/4 divide by 1/2 **(2)**

.....

13 Write 42% as (a) a decimal and (b) a fraction in its simplest form.

(2)

14 A ticket costs £80. The price rises by 20%. Work out the new price.

(2)

15 Write 6/30 in its simplest form.

(1)

16 Increase £36 by 10%.

(2)

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17 3 of the 8 seats in a cinema are taken. Write 3 out of 8 as a percentage.

(2)

---

18 Write 1/20 as (a) a decimal and (b) a percentage.

(2)

---

19 Write these fractions in order of size, smallest first.
1/4, 4/5, 6/12

(2)

---

20 Write these fractions in order of size, largest first.
1/3, 1/6, 3/4

(2)

---

21 173 of the 200 seats in a cinema are taken. Write 173 out of 200 as a percentage.

(2)

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22 A recipe for 8 people uses 2 1/2 cups of flour. Priya wants to make enough of the recipe for 12 people, which is 1 1/2 times the original recipe. Calculate how many cups of flour Priya needs.

(3)

---

23 6 out of 80 pupils walk to school. What fraction is this? Give your answer in its simplest form.

(2)

---

24 Write 40/88 in its simplest form.

(1)

---

25 Work out 5% of 200.

(2)

---

26 A team wins 2 of its 16 matches. Write 2 out of 16 as a percentage.

(2)

---

27 Work out 3/4 of £12.

(2)

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28 Work out 1/6 of 72.

(2)

---

29 Write 80/88 in its simplest form.

(1)

---

30 Work out 80% of 480.

(2)

---

31 A coat has a normal price of £68. In a sale it is reduced by 15%. Calculate the sale price of the coat.

(3)

---

32 Sophie's annual salary increases from £24000 to £25800. Calculate the percentage increase in her salary.

(3)

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33 Aidan's weekly pay increases from £320 to £368. Calculate the percentage increase in his pay.

(3)

---

34 Work out 3/5 x 2/9, giving your answer as a fraction in its simplest form.

(2)

---

35 Work out 5/6 divide by 1/4, giving your answer as a mixed number.

(2)

---

36 A school has 1200 students. 5/8 of the students are girls. 3/10 of the girls study French. Calculate the number of girls who study French.

(3)

---

37 A school has 900 students. 2/3 of the students are in Key Stage 3. 1/5 of the Key Stage 3 students play a musical instrument. Calculate the number of Key Stage 3 students who play a musical instrument.

(3)

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38 A price of £150 is increased by 20%, and then the new price is decreased by 20%.

(a) Calculate the final price after both changes. **(3)**

.....

(b) Hence state, with a reason, whether the final price is equal to the original price of £150. **(1)**

---

39 Tom spends 2/5 of his monthly pay on rent. He then spends 1/4 of what remains on food. After paying for rent and food, Tom has £540 left. Calculate Tom's monthly pay.

(4)

---

40 Fatima spends 3/8 of her savings on a laptop. She then spends 20% of what remains on accessories. After both purchases she has £210 left. Calculate how much Fatima had in her savings originally.

(4)

---

41 A price of £200 is increased by 10%, and then the new price is decreased by 10%. Calculate the final price after both changes.

(3)

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Mark scheme · 1.2 Number: Fractions, Decimals, Percentages: 2-hour Pack

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

Question 1

5/25 x 100 or equivalent	M1
20% cao	A1

Answer: **20%**

Question 2

40% of 240 = 96 or a multiplier of 0.6 used	M1
£144 cao	A1

Answer: **£144**

Question 3

40% of 120 = 48 or a multiplier of 1.4 used	M1
£168 cao	A1

Answer: **£168**

Question 4

52 ÷ 4 = 13 or 52 x 3 = 156	M1
39 cao	A1

Answer: **39**

Question 5

2/5 cao	B1

Answer: **2/5**

Question 6

converts to a common denominator (6) or to decimals	M1
1/3, 1/2, 2/3 cao	A1

Answer: **1/3, 1/2, 2/3**

Question 7

£24 ÷ 3 = £8 or £24 x 2 = £48	M1
£16 cao	A1

Answer: **£16**

Question 8

converts to a common denominator (12) or to decimals	M1
3/4, 1/2, 2/6 cao	A1

Answer: **3/4, 1/2, 2/6**

Question 9

converts to a common denominator (60) or to decimals	M1
1/4, 6/12, 4/5 cao	A1

Answer: **1/4, 6/12, 4/5**

Question 10

4/5 cao	B1

Answer: **4/5**

Question 11

(a) 0.675	B1
(b) 27/40	B1

Answer: **(a) 0.675, (b) 27/40**

Question 12

(a) (2 x 3)/(3 x 5) = 6/15 oe	M1
(a) 2/5 cao	A1
(a) Answer: **2/5**	
(b) 3/4 x 2/1 oe (keep, change, flip shown)	M1
(b) 1 1/2 oe 3/2 cao	A1

(b) Answer: **1 1/2 (3/2)**

Question 13

(a) 0.42	B1
(b) 21/50	B1

Answer: **(a) 0.42, (b) 21/50**

Question 14

20% of 80 = 16 or a multiplier of 1.2 used	M1
£96 cao	A1

Answer: **£96**

Question 15

1/5 cao	B1

Answer: **1/5**

Question 16

10% of 36 = 3.6 or a multiplier of 1.1 used	M1
£39.60 cao	A1

Answer: **£39.60**

Question 17

3/8 x 100 or equivalent	M1
37.5% cao	A1

Answer: **37.5%**

Question 18

(a) 0.05	B1
(b) 5%	B1

Answer: **(a) 0.05, (b) 5%**

Question 19

converts to a common denominator (60) or to decimals	M1
1/4, 6/12, 4/5 cao	A1

Answer: **1/4, 6/12, 4/5**

Question 20

converts to a common denominator (12) or to decimals	M1
3/4, 1/3, 1/6 cao	A1

Answer: **3/4, 1/3, 1/6**

Question 21

173/200 x 100 or equivalent	M1
86.5% cao	A1

Answer: **86.5%**

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Question 22

2 1/2 and 1 1/2 written as improper fractions: 5/2 and 3/2 oe	M1
5/2 x 3/2 = 15/4 oe	M1
3 3/4 cups oe cao	A1

Answer: **3 3/4 cups**

Question 23

6/80 seen	M1
3/40 cao	A1

Answer: **3/40**

Question 24

5/11 cao	B1

Answer: **5/11**

Question 25

10% = 20 or 5/100 x 200 seen	M1
10 cao	A1

Answer: **10**

Question 26

2/16 x 100 or equivalent	M1
12.5% cao	A1

Answer: **12.5%**

Question 27

£12 ÷ 4 = £3 or £12 x 3 = £36	M1
£9 cao	A1

Answer: **£9**

Question 28

72 ÷ 6 = 12 or 72 x 1 = 72	M1
12 cao	A1

Answer: **12**

Question 29

10/11 cao	B1

Answer: **10/11**

Question 30

10% = 48 or 80/100 x 480 seen	M1
384 cao	A1

Answer: **384**

Question 31

15% of 68 = 10.20 oe, or multiplier 0.85 identified	M1
68 - 10.20 oe, or 68 x 0.85	M1
57.80 (pounds) cao	A1

Answer: **£57.80**

Question 32

increase = 25800 - 24000 = 1800 oe	M1
1800/24000 (x 100) oe	M1
7.5% cao	A1

Answer: **7.5%**

Question 33

increase = 368 - 320 = 48 oe	M1
48/320 (x 100) oe	M1
15% cao	A1

Answer: **15%**

Question 34

(3 x 2)/(5 x 9) = 6/45 oe	M1
2/15 cao	A1

Answer: **2/15**

Question 35

5/6 x 4/1 oe (keep, change, flip shown)	M1
3 1/3 oe 10/3 cao	A1

Answer: **3 1/3 (10/3)**

Question 36

5/8 x 1200 = 750 oe (number of girls)	M1
3/10 x 750 oe	M1
225 cao	A1

Answer: **225 girls**

Question 37

2/3 x 900 = 600 oe (number of Key Stage 3 students)	M1
1/5 x 600 oe	M1
120 cao	A1

Answer: **120 students**

Question 38

(a) 150 x 1.2 = 180 oe	M1
(a) 180 x 0.8 oe	M1
(a) 144 (pounds) cao	A1

(a) Answer: **£144**

(b) no, with correct reason, e.g. final price 144 is £6 less than 150 because the 20% decrease is taken from the larger, increased price (180) oe ft	B1

(b) Answer: **No; the final price is £144, £6 less than the original £150**

Question 39

remaining after rent = 3/5 of pay oe	M1
food = 1/4 x 3/5 = 3/20 of pay oe	M1
remaining after food = 3/5 - 3/20 = 9/20 of pay, set equal to 540 oe	M1
1200 (pounds) cao	A1

Answer: **£1200**

Question 40

remaining after laptop = 5/8 of savings oe	M1
accessories = 0.2 x 5/8 = 1/8 of savings oe	M1
remaining after accessories = 5/8 - 1/8 = 1/2 of savings, set equal to 210 oe	M1
420 (pounds) cao	A1

Answer: **£420**

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Question 41

200 x 1.1 = 220 oe	**M1**
220 x 0.9 oe	**M1**
198 (pounds) cao	**A1**

Answer: **£198**

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