2.5 Percentages: 30-minute Pack

GL ASSESSMENT GL-11PLUS-MATHS · Calculators not allowed · about 30 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Answer the following questions about one quantity as a percentage of another.

(a) Express 18 out of 40 as a percentage. **(2)**

(b) In a class of 32 pupils, 20 are girls. What percentage of the class are boys? **(3)**

.....

2 A shop has 20 cakes and sells 7 of them. What percentage were sold?

- ☐ A) 0.35%
- ☐ B) 34%
- ☐ C) 36%
- ☐ D) 7%
- ☐ E) 35%

3 A shop has 20 cakes and sells 10 of them. What percentage were sold?

- ☐ A) 50%
- ☐ B) 0.5%
- ☐ C) 200%
- ☐ D) 51%
- ☐ E) 5%

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4 A shop has 250 cakes and sells 175 of them. What percentage were sold?

- [ ] A) 0.7%
- [ ] B) 7%
- [ ] C) 70%
- [ ] D) 175%
- [ ] E) 71%

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5 Harry scores 9 goals from 20 shots. What percentage of the shots were goals?

- [ ] A) 0.45%
- [ ] B) 46%
- [ ] C) 44%
- [ ] D) 9%
- [ ] E) 45%

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6 Grace scores 18 out of 50 in a test. What is this as a percentage?

- [ ] A) 18%
- [ ] B) 36%
- [ ] C) 3.6%
- [ ] D) 64%
- [ ] E) 0.36%

---

7 Harry scores 53 goals from 100 shots. What percentage of the shots were goals?

- [ ] A) 47%
- [ ] B) 54%
- [ ] C) 53%
- [ ] D) 52%
- [ ] E) 0.53%

---

8 Arjun scores 24 goals from 80 shots. What percentage of the shots were goals?

- [ ] A) 30%
- [ ] B) 31%
- [ ] C) 24%
- [ ] D) 0.3%
- [ ] E) 70%

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9 Anya scores 1 goals from 10 shots. What percentage of the shots were goals?

- [ ] A) 1,000%
- [ ] B) 9%
- [ ] C) 90%
- [ ] D) 10%
- [ ] E) 0.1%

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10 The population of a village was 2,400 in 2020. By 2024 the population had increased by 12%. Calculate the population of the village in 2024.

(3)

---

11 A shop has 200 cakes and sells 195 of them. What percentage were sold?

- [ ] A) 195%
- [ ] B) 97.5%
- [ ] C) 9.75%
- [ ] D) 0.975%
- [ ] E) 2.5%

---

12 Arjun scores 4 goals from 5 shots. What percentage of the shots were goals?

- [ ] A) 8%
- [ ] B) 125%
- [ ] C) 80%
- [ ] D) 81%
- [ ] E) 0.8%

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13 Ewan scores 18 goals from 20 shots. What percentage of the shots were goals?

- [ ] A) 89%
- [ ] B) 0.9%
- [ ] C) 10%
- [ ] D) 18%
- [ ] E) 90%

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14 Kwame scores 31 out of 50 in a test. What is this as a percentage?

- [ ] A) 6.2%
- [ ] B) 62%
- [ ] C) 0.62%
- [ ] D) 31%
- [ ] E) 38%

---

15 Oliver scores 70 goals from 80 shots. What percentage of the shots were goals?

- [ ] A) 8.75%
- [ ] B) 70%
- [ ] C) 86.5%
- [ ] D) 87.5%
- [ ] E) 0.875%

---

16 Niamh scores 1 out of 4 in a test. What is this as a percentage?

- [ ] A) 25%
- [ ] B) 1%
- [ ] C) 0.25%
- [ ] D) 400%
- [ ] E) 2.5%

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17 Yusuf scores 420 goals from 500 shots. What percentage of the shots were goals?

- [ ] A) 84%
- [ ] B) 420%
- [ ] C) 0.84%
- [ ] D) 83%
- [ ] E) 85%

---

18 Oliver scores 34 out of 40 in a test. What is this as a percentage?

- [ ] A) 0.85%
- [ ] B) 34%
- [ ] C) 84%
- [ ] D) 8.5%
- [ ] E) 85%

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19 A shop has 100 cakes and sells 72 of them. What percentage were sold?

- ☐ A) 71%
- ☐ B) 28%
- ☐ C) 72%
- ☐ D) 7.2%
- ☐ E) 0.72%

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20 A laptop priced at £600 is first reduced by 20%. A student discount of a further 10% is then applied to the reduced price.

(a) Calculate the final price of the laptop. **(3)**

(b) A sales assistant claims that a 20% discount followed by a 10% discount is the same as a single 30% discount. Show that the assistant is wrong, and find the single percentage discount that is equivalent to the two discounts combined. **(4)**

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Mark scheme · 2.5 Percentages: 30-minute Pack

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

Question 1

(a) 18/40 oe seen (e.g. 9/20 or 0.45) **M1**

(a) 45% cao **A1**

(a) Answer: 45%

(b) number of boys = 32 - 20 (= 12) **M1**

(b) dep on first M1: 12/32 oe seen **M1**

(b) 37.5% cao **A1**

(b) Answer: 37.5%

Question 2

correct option E (35%) cao **B1**

Answer: E) 35%

Question 3

correct option A (50%) cao **B1**

Answer: A) 50%

Question 4

correct option C (70%) cao **B1**

Answer: C) 70%

Question 5

correct option E (45%) cao **B1**

Answer: E) 45%

Question 6

correct option B (36%) cao **B1**

Answer: B) 36%

Question 7

correct option C (53%) cao **B1**

Answer: C) 53%

Question 8

correct option A (30%) cao **B1**

Answer: A) 30%

Question 9

correct option D (10%) cao **B1**

Answer: D) 10%

Question 10

12% of 2400 found (= 288), e.g. via 10% = 240 and 2% = 48 **M1**

dep: 2400 + their 12% increase **M1**

2688 cao **A1**

Answer: 2688

Question 11

correct option B (97.5%) cao **B1**

Answer: B) 97.5%

Question 12

correct option C (80%) cao **B1**

Answer: C) 80%

Question 13

correct option E (90%) cao **B1**

Answer: E) 90%

Question 14

correct option B (62%) cao **B1**

Answer: B) 62%

Question 15

correct option D (87.5%) cao **B1**

Answer: D) 87.5%

Question 16

correct option A (25%) cao **B1**

Answer: A) 25%

Question 17

correct option A (84%) cao **B1**

Answer: A) 84%

Question 18

correct option E (85%) cao **B1**

Answer: E) 85%

Question 19

correct option C (72%) cao **B1**

Answer: C) 72%

Question 20

(a) 600 x 0.8 oe (= 480) **M1**

(a) dep: their 480 x 0.9 oe **M1**

(a) £432 cao **A1**

(a) Answer: £432

(b) tests the claim: 600 x 0.7 (= 420) **M1**

(b) 420 does not equal 432 (ft from part a), so the assistant is wrong (cso) **A1**

(b) combined multiplier found: 0.8 x 0.9 (= 0.72), or (600 - 432)/600 **M1**

(b) 28% cao **A1**

(b) Answer: 28% (not 30%); the assistant is incorrect since a single 30% discount would give £420, not £432

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