Name:

Exam Style Questions

Fractions: increasing or decreasing

Corbettmaths

Equipment needed: Calculator, pen

Guidance

1. Read each question carefully before you begin answering it.
2. Check your answers seem right.
3. Always show your workings

Video Tutorial

www.corbettmaths.com/contents

Video 141

Answers and Video Solutions

1.

SALE
⅓ OFF ALL ITEMS

The original price of a football is £12.
What is the sale price of the football?

$\frac{1}{3}$ of £12 = £4

12 - 4

£ 8

(2)

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2. Increase £800 by $\frac{1}{4}$

800 ÷ 4 = 200

800 + 200

£ 1000

(2)

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3. Decrease 150kg by $\frac{1}{5}$

150 ÷ 5 = 30

150 - 30

120 kg

(2)

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4. Decrease 21 by $\frac{1}{7}$

21 ÷ 7 = 3

21 - 3 = 18

18

(2)

5. Sarah normally earns £600 each month.

In December she is given a bonus of $\frac{1}{5}$ of her normal pay.

(a) Work out $\frac{1}{5}$ of 600.

600 ÷ 5 = 120

£ 120

(1)

(b) Work out her total pay for December.

600 + 120

£ 720

(1)

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6. The value of a house increased by $\frac{1}{10}$ over five years.

In 2020 the value of the house was £140,000
Work out the value of the house in 2025.

140000 ÷ 10 = 14000

140000 + 14000 = 154000

£ 154000

(2)

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7. Decrease 826 by $\frac{5}{8}$

826 ÷ 8 = 103.25

103.25 × 5 = 516.25

826 − 516.25 = 309.75

309.75

(2)

8. Matthew weighed 81kg before training for a marathon

His weight decreased by a $\frac{1}{9}$

Work out his weight after the marathon.

$81 \div 9 = 9$

$81 - 9 = 72$

72 kg

(2)

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9. In 2024, Bristol United's average attendance was 2000

The following season, the average attendance increased by $\frac{2}{5}$

Work out the average attendance in 2025

$2000 \div 5 = 400$

$400 \times 2 = 800$

$2000 + 800$

2800

(2)

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10. Increase 24 by $\frac{2}{3}$

$24 \div 3 = 8$

$8 \times 2 = 16$

$24 + 16 = 40$

40

(2)

11. Decrease 36 by $\frac{3}{4}$

$\frac{3}{4}$ of 36 = 27

36 - 27 = 9

9

(2)

12. Increase 64 by $\frac{3}{8}$

64 ÷ 8 = 8

8 × 3 = 24

64 + 24 = 88

88

(2)

13. 380000 passengers departed an airport last year.

This year, the number of passengers is expected to increase by $\frac{13}{200}$

Calculate the number of passengers that are expected to depart the airport this year.

380000 ÷ 200 = 1900

1900 × 13 = 24700

380000 + 24700 = 404700

404700

(2)

14. Benjamin is starting a new training program.

Each month he increases the distance he runs by $\frac{3}{10}$

In month 1, he ran 20 miles.

(a) How far does Benjamin run in month 2?

$20 \div 10 = 2$

$2 \times 3 = 6$

$20 + 6 = 26$

26 .....miles

(2)

(b) How far does Benjamin run in month 3?

$\frac{3}{10}$ of $26 = 7.8$

$26 + 7.8 = 33.8$

33.8 .....miles

(2)

(c) How far does Benjamin run in total over the first three months?

$20 + 26 + 33.8 = 79.8$

79.8 .....miles

(1)

15. Last year Melissa was paid £2200 per month.
Last year Natalie was paid £3200 per month.

Melissa's salary is increased by $\frac{3}{5}$

Natalie's salary is increased by $\frac{1}{8}$

Who is paid more each month this year?
You must show your workings.

Melissa

2200 ÷ 5 = 440

440 x 3 = 1320

2200 + 1320 = 3520

Natalie

3200 ÷ 8 = 400

3200 + 400 = 3600

Natalie

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(4)

16. The population of an island in 2000 was 2385

By 2025 the population has decreased by $\frac{2}{5}$

What was the population of the island in 2025?

2385 ÷ 5 = 477

477 x 2 = 954

2385 - 954 = 1431

1431

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(3)

17. The price of a new car is £18000

In a sale, the price is reduced by $\frac{2}{9}$

David buys the car in the sale.
He pays a £2000 deposit and pays the rest over 20 monthly payments.

Find the cost of each monthly payment.

18 000 ÷ 9 = 2000

2000 × 2 = 4000

18000 - 4000 = 14000

14000 - 2000 = 12000

$$20\overline{)12000} = 600$$

£600

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(5)