Name:

Exam Style Questions

Algebraic Fractions

Corbettmaths

Equipment needed: 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

Videos 21, 22, 23, 24

Answers and Video Solutions

1. Simplify fully

$$\frac{x}{3} + \frac{x}{4}$$

....

(2)

2. Express as a single fraction

$$\frac{w}{2} - \frac{w+1}{7}$$

....

(3)

3. Express as a single fraction

$$\frac{v+3}{2} + \frac{2v+1}{5}$$

....

(3)

4. Express as a single fraction

$$\frac{w}{7} - \frac{w+2}{5}$$

....

(3)

5. Simplify

$$\frac{5}{x} + \frac{7}{6x}$$

....

(3)

6. Simplify

$$\frac{3}{2w} + \frac{5}{3w}$$

....

(3)

7. Simplify

$$\frac{2}{3y} - \frac{1}{5y}$$

....
(3)

8. Express as a single fraction

$$\frac{1}{x+1} + \frac{4}{x-2}$$

....
(3)

9. Express as a single fraction.

$$\frac{3x+1}{4} + \frac{2x-1}{3}$$

....
(3)

10. Simplify

$$\frac{w}{2} \times \frac{w}{4}$$

....
(1)

11. Simplify fully.

$$\frac{3a}{2} \times \frac{4}{5a}$$

....
(2)

12. Simplify fully.

$$\frac{5a^3}{6y} \times \frac{4a^2y}{2ay}$$

....
(2)

13. Simplify fully.

$$\frac{c-2}{4} \times \frac{12}{2c-4}$$

....
(2)

14. Simplify fully.

$$\frac{w}{2} \div \frac{w}{6}$$

....
(2)

15. Simplify fully.

$$\frac{v+3}{2} \div \frac{3v+9}{5}$$

....
(2)

16. Simplify fully.

$$\frac{v + 3}{15} \div \frac{v^2 + 3v}{25}$$

....

(3)

17. Simplify

$$\frac{x^2 + 8x}{x^2 + 10x + 16}$$

....

(3)

18. Simplify

$$\frac{2(x + 7)^4}{(x + 7)^3}$$

....

(1)

19.   Simplify

$$\frac{x^2 - 3x + 2}{x^2 + 5x - 6}$$

....
(3)

20.   Simplify

$$\frac{x^2 - 4}{x^2 - 7x + 10}$$

....
(3)

21.   Simplify fully.

$$\frac{4x^2 - 25}{6x^2 - 11x - 10}$$

....
(3)

22. Write as a single fraction in its simplest form.

$$\frac{w}{w+3} - \frac{5}{w(w+3)}$$

....
(3)

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23. Write an expression for the area of the rectangle.

$$\frac{w+3}{2}$$

$$\frac{w-1}{3}$$

....
(3)

24. Given

$$x = \frac{c}{3} \qquad y = \frac{ac}{4} \qquad z = \frac{a^2}{2c+1}$$

Find an expression for:

(a) x^2

....
(2)

(b) $x + y$

....
(2)

(c) $\frac{xy}{z}$

....
(4)

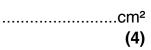25. The length of the base of a triangle and its perpendicular height are:

base: $\dfrac{x + 5}{10}$ cm   height: $\dfrac{x - 1}{4}$ cm

Find an expression for the area of the triangle.

..........................cm²

(4)

26. Simplify

$$\dfrac{y^2 - 6y}{8} \times \dfrac{12}{y^2 - 4y - 12}$$

....

(3)

27. Simplify fully.

$$\frac{x^2 - x}{9} \times \frac{3}{x^2 - 8x + 7}$$

....

(3)

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28. Simplify fully

$$\frac{1}{3w^2 + 5w - 12} \div \frac{1}{2w^2 + w - 15}$$

....

(4)

29. Simplify fully $\dfrac{3}{x+2} + \dfrac{5-3x}{4} + x$

....

(4)

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30. Simplify $(x^2 + 4x) \times \dfrac{x^2 + 2x - 24}{x^2 - 16}$

....

(4)

31. $4 + \dfrac{2x-1}{x-1} - \dfrac{x+2}{x+1}$ can be written in the form $\dfrac{ax^2+b}{x^2-1}$

where a and b are integers.

Find the values of a and b.

....

(4)

32. Simplify fully

$$\frac{8x^2 - 2}{6x^2 - 29x + 9} \times \left(\frac{1}{2x + 1} + \frac{1}{x - 2} \right)$$

....

(6)