

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](http://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)

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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)

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14. Simplify fully.



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

.....  
(2)

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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)

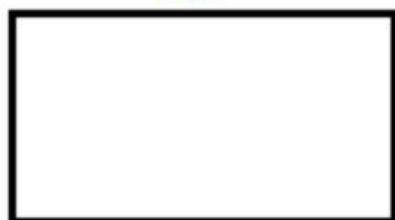
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23. Write an expression for the area of the rectangle.



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

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



.....

(3)

24. Given



$$x = \frac{c}{3}$$

$$y = \frac{ac}{4}$$

$$z = \frac{a^2}{2c + 1}$$

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:



$$\text{base: } \frac{x+5}{10} \text{ cm} \quad \text{height: } \frac{x-1}{4} \text{ cm}$$

Find an expression for the area of the triangle.

.....cm<sup>2</sup>  
(4)

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26. Simplify



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

.....  
(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  $\frac{3}{x+2} + \frac{5-3x}{4} + x$



.....  
(4)

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



.....  
(4)

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



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)