

Name:

Exam Style Questions

Equations involving fractions



Equipment needed: Pen, Calculator

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 111



Answers and Video Solutions



1. Solve



$$\frac{x}{4} = 8$$

$$\times 4 \quad \times 4$$

$$x = 32$$

$$x = \underline{32} \quad (1)$$

2. Solve



$$\frac{y}{5} = 5$$

$$\times 5 \quad \times 5$$

$$y = 25$$

$$y = \underline{25} \quad (1)$$

3. Solve



$$\frac{w+3}{4} = 2$$

$$\times 4 \quad \times 4$$

$$w+3 = 8$$

$$-3 \quad -3$$

$$w = 5$$

$$w = \underline{5} \quad (2)$$

4. Solve



$$\frac{2a}{3} = 8$$

$$\times 3 \quad \times 3$$

$$2a = 24$$

$$\div 2 \quad \div 2$$

$$a = 12$$

$$a = \frac{12}{1} \quad (2)$$

5. Solve the equation



$$\frac{3w}{4} = \frac{1}{2}$$

$$\times 4 \quad \times 4$$

$$3w = 2$$

$$\div 3 \quad \div 3$$

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

$$w = \frac{2}{3} \quad (2)$$

6. Solve the equation



$$\frac{2w + 1}{5} = \frac{3}{8}$$

$$\times 5 \quad \times 5$$

$$2w + 1 = 1.875$$

$$-1 \quad -1$$

$$2w = 0.875$$

$$\div 2 \quad \div 2$$

$$w = \frac{7}{16}$$

$$w = \frac{7}{16} \text{ or } 0.4375 \quad (2)$$

7. Solve



$$\frac{10x - 1}{7} = 8$$

$$\times 7 \quad \times 7$$

$$10x - 1 = 56$$

$$+1 \quad +1$$

$$10x = 57$$

$$x = 5.7$$

$$x = 5.7 \quad (3)$$

8. Solve



$$\frac{7c + 4}{8} = 11$$

$$\times 8 \quad \times 8$$

$$7c + 4 = 88$$

$$-4 \quad -4$$

$$7c = 84$$

$$c = 12$$

$$c = 12 \quad (3)$$

9. Solve



$$\frac{53 - 2x}{5} = 7$$

$$\times 5 \quad \times 5$$

$$53 - 2x = 35$$

$$+2x \quad +2x$$

$$53 = 35 + 2x$$

$$-35 \quad -35$$

$$18 = 2x$$

$$x = 9 \quad (3)$$

10. Solve



$$\frac{11 - w}{5} = 3 + w$$

$$\times 5 \quad \times 5$$

$$11 - w = 15 + 5w$$

$$+w \quad +w$$

$$11 = 15 + 6w$$

$$-15 \quad -15$$

$$-4 = 6w$$

$$6w = -4$$

$$w = -\frac{2}{3}$$

$$w = -\frac{2}{3} \quad (3)$$

11. Solve



$$\frac{9(4x - 1)}{2x} = 15$$

$$\times 2x \quad \times 2x$$

$$9(4x - 1) = 30x$$

$$36x - 9 = 30x$$

$$+9 \quad +9$$

$$36x = 30x + 9$$

$$-30x \quad -30x$$

$$6x = 9$$

$$x = 1.5$$

$$x = 1.5 \quad (3)$$

12. Solve



$$\frac{x - 8}{3} = \frac{7x}{9}$$

$$9(x - 8) = 21x$$

$$9x - 72 = 21x$$

$$-9x \quad -9x$$

$$-72 = 12x$$

$$x = -6$$

$$x = -6 \quad (3)$$

13. Solve



$$\frac{w+7}{4} + \frac{3w+1}{2} = -3$$

You must show your working.

$$\frac{w+7}{4} + \frac{6w+2}{4} = -3$$

$$\frac{7w+9}{4} = -3$$

$$7w+9 = -12$$

$$7w = -21$$

$$w = -3$$

$$w = \frac{-3}{(4)}$$

14. Solve



$$\frac{2x-6}{2} + \frac{x+1}{5} = 8$$

You must show your working.

$$\frac{10x-30}{10} + \frac{2x+2}{10} = 8$$

$$\frac{12x-28}{10} = 8$$

$$12x-28 = 80$$

$$12x = 108$$

$$x = 9$$

$$x = \frac{9}{(4)}$$

15. Solve



$$\frac{m+6}{2} - \frac{2m-2}{3} = 3$$

You must show your working.

$$\frac{3m+18}{6} - \frac{4m-4}{6} = 3$$

$$\frac{-m+22}{6} = 3$$

$$-m+22 = 18$$

$$-m = -4$$

$$m = 4$$

$$m = \underline{4} \quad (4)$$

16. Solve



$$\frac{4k-5}{7} - \frac{k+2}{2} = -1$$

You must show your working.

$$\frac{8k-10}{14} - \frac{7k+14}{14} = -1$$

$$\frac{k-24}{14} = -1$$

$$k-24 = -14$$

$$k = 10$$

$$k = \underline{10} \quad (4)$$

17. Solve



$$\frac{10x - 3}{3} + \frac{5x + 2}{4} = 5$$

You must show your working.

$$\frac{40x - 12}{12} + \frac{15x + 6}{12} = 5$$

$$\frac{55x - 6}{12} = 5$$

$$55x - 6 = 60$$

$$55x = 66$$

$$x = \frac{66}{55}$$

$$x = \frac{6}{5} \text{ or } 1.2$$

$$x = \frac{6}{5} \text{ or } 1.2$$

(4)

18. Solve



$$\frac{w - 4}{3} + \frac{w + 1}{6} = \frac{7}{2}$$

$$\frac{2w - 8}{6} + \frac{w + 1}{6} = \frac{7}{2}$$

$$\frac{3w - 7}{6} = \frac{7}{2}$$

$$\frac{3w - 7}{6} = \frac{21}{6}$$

$$3w - 7 = 21$$

$$3w = 28$$

$$w = \frac{28}{3}$$

$$w = 9\frac{1}{3}$$

(4)

$$\text{or } \frac{28}{3}$$

19. Solve



$$\frac{3y-1}{6} + \frac{4y+3}{12} = \frac{7}{3}$$

$$\frac{6y-2}{12} + \frac{4y+3}{12} = \frac{7}{3}$$

$$\frac{10y+1}{12} = \frac{7}{3}$$

$$\frac{10y+1}{12} = \frac{28}{12}$$

$$10y+1 = 28$$

$$10y = 27$$

$$y = 2.7$$

$$y = \frac{2.7}{(4)}$$

20. Solve



$$\frac{3x+1}{5} + \frac{x-6}{4} + \frac{x}{10} = 12$$

$$\frac{12x+4}{20} + \frac{5x-30}{20} + \frac{2x}{20} = 12$$

$$\frac{19x-26}{20} = 12$$

$$19x - 26 = 240$$

$$19x = 266$$

$$x = 14$$

$$x = \frac{14}{(5)}$$

20. Solve



$$\frac{2a-5}{4} - \frac{1-a}{3} = \frac{3a+1}{6}$$

$$\frac{6a-15}{12} - \frac{4-4a}{12} = \frac{3a+1}{6}$$

$$\frac{10a-19}{12} = \frac{3a+1}{6}$$

$$\frac{10a-19}{12} = \frac{6a+2}{12}$$

$$10a-19 = 6a+2$$

$$4a = 21$$

$$a = 5.25$$

$$a = \frac{5.25}{(5)}$$