

## A Algebra: Solving equations with brackets

Solve these equations:

1  $3(x+4) = -21$

4  $2(-x+1) = 14$

7  $\frac{2(x+1)}{3} = 4$

10  $\frac{7(x-4)}{4} = -14$

2  $5(x-2) = 25$

5  $3(-x-2) = 6$

8  $\frac{3(x-2)}{7} = -6$

11  $\frac{3(x+4)}{5} = 18$

3  $-2(x+1) = 4$

6  $4(-x+2) = 12$

9  $\frac{5(x+1)}{3} = 15$

12  $\frac{4(-x-2)}{7} = -20$

## B Algebra: Solving equations by removing more than two numbers

Solve these equations:

1  $\frac{2(x+1)}{3} + 1 = 6$

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

7  $\frac{2(x+1)}{5} - 1 = -2$

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

2  $\frac{3(x+1)}{2} - 1 = 6$

5  $\frac{5x-1}{2} - 4 = -12$

8  $\frac{3(x-1)}{2} - 11 = 2$

11  $\frac{2(x+2)}{5} + 1 = 3$

3  $\frac{5(x+1)}{7} = -25$

6  $\frac{4x+1}{3} - 8 = -1$

9  $\frac{6x-1}{7} + 4 = 3$

12  $\frac{4(3-x)}{7} + 1 = -7$

## C Indices: Multiplying index expressions

1  $a^4 \times a^8$

3  $a \times a^4 \times a^2$

5  $6a^2 \times 3a$

7  $16a^4 \times 2ab$

9  $-5a^2 \times 3ab$

11  $7a^3 \times 2a^4b$

13  $-9a^2 \times 3a \times 2a^2$

15  $-7a \times a^3 \times 2ab^2$

17  $3a^2 \times -5a^2b^3$

19  $-9a^2 \times 3a^4 \times 2a$

2  $b^3 \times b^2$

4  $2a \times 5a^2$

6  $9a^3 \times 4a$

8  $3a^2b \times b$

10  $2a^2 \times -4a \times a$

12  $3a^2b \times 2ab^2$

14  $6a^2 \times -2a \times 3a^2$

16  $9ab \times 2 \times -3a^2b$

18  $-5 \times 2a^2b \times 3ab$

20  $19a^4 \times 3a \times 4a^5$

## D Indices: Simplifying fraction expressions

1  $\frac{a^3b^2}{a^4b} \times \frac{a}{b}$

4  $\frac{6a^2b}{3ab} \times \frac{2a}{b}$

7  $\frac{5a^2b^4}{2ab} + \frac{3ab^4}{2a}$

10  $\frac{5a^2c}{2c^2} + \frac{3a^2c}{5c}$

2  $\frac{4a^2b^3}{a^4} \times \frac{3a^2}{b^3}$

5  $\frac{7a^3b^4}{5ab} \times \frac{6a^2b}{2b}$

8  $\frac{6a^2b}{5a} + \frac{3b}{2a}$

11  $\frac{3abc^2}{a^2b} + \frac{2a}{3b}$

3  $\frac{5a^2b}{2ab} \times \frac{4a}{b}$

6  $\frac{a^2b}{ab^3} + \frac{2a}{b}$

9  $\frac{3a^2b}{2c^2} + \frac{3a}{2c}$

12  $\frac{4a^2b}{3ab^2} + \frac{2b}{5c^2}$

## E Indices: Zero Index

Evaluate:

1  $5^0$

4  $(2a)^0$

7  $2a + b^0$

10  $(4a^0b)^2$

13  $5^0 + 2^0$

2  $6a^0$

5  $3a^0 + 1$

8  $6a \times c^0$

11  $(6a^0c^2)^3$

14  $3^0a + 2a$

3  $4b^0$

6  $9a + 7a^0$

9  $(3a^2b^2)^0$

12  $9a^2 + c^0$

15  $7^0b - 2b$

### Worksheet 11

- A** 1 -11    2 7    3 -3    4 -6    5 -4  
 6 -1    7 5    8 -12    9 8    10 -4  
 11 26    12 33
- B** 1  $6\frac{1}{2}$     2  $3\frac{2}{3}$     3 -36    4 4    5 -3  
 6 5    7  $-3\frac{1}{2}$     8  $9\frac{2}{3}$     9 -1    10 11  
 11 3    12 17
- C** 1  $a^{12}$     2  $b^5$     3  $a^7$     4  $10a^3$   
 5  $18a^3$     6  $36a^4$     7  $32a^5b$     8  $3a^2b^2$   
 9  $-15a^3b$     10  $-8a^4$     11  $14a^7b$     12  $6a^3b^3$   
 13  $-54a^5$     14  $-36a^5$     15  $-14a^5b^2$     16  $-54a^3b^2$   
 17  $-15a^4b^3$     18  $-30a^3b^2$     19  $-54a^7$     20  $228a^{10}$
- D** 1 1    2 12    3  $\frac{10a^2}{b}$     4  $\frac{4a^2}{b}$   
 5  $\frac{21a^4b^3}{5}$     6  $\frac{1}{2b}$     7  $\frac{5a}{3b}$     8  $\frac{4a^2}{5}$   
 9  $\frac{ab}{c}$     10  $\frac{25}{6c}$     11  $\frac{9bc^2}{2a^2}$     12  $\frac{10ac^2}{3b^2}$
- E** 1 1    2 6    3 4    4 1  
 5 4    6  $9a+7$     7  $2a+1$     8  $6a$   
 9 1    10  $16b^2$     11  $216c^6$     12  $9a^2+1$   
 13 2    14  $3a$     15  $-b$