Chapter 10  Simplifying Algebraic Expressions

Question 1
Simplify, if possible, \(x^2 + 3y^2 - 6y + 7x^2\).

Question 2
Explain the distinction, if any, between \((xy^2)(xy^2)\) and \(xy^2xy^2\).

Question 3
Explain the distinction, if any, between \((xy^2)(xy^2)\) and \((xy^2) + (xy^2)\). In both cases, simplify the expressions.

Question 4
Remove the brackets and simplify \(\frac{1}{2}(x + 2y) + \frac{7}{2}(4x - y)\).

Question 5
Remove the brackets from \((x + 1)(x + 2)\). Use your result to remove the brackets from \((x + 1)(x + 2)(x + 3)\).

Chapter 11  Factorisation

Question 1
Factorise \(17t + 34\).

Question 2
Factorise \(4x + 6xy\).

Question 3
Factorise \(16abc - 8ab^2 + 24bc\).

Question 4
Factorise the quadratic expression \(x^2 + 3x + 2\).
Question 5
Factorise the quadratic expression $x^2 - 11x + 24$

Question 6
Factorise the quadratic expression $2x^2 + 5x + 3$

Chapter 12 Algebraic fractions

Question 1
Simplify $\frac{9xy}{3y}$

Question 2
Simplify $\frac{18y}{9y^2 + 3y}$

Question 3
Simplify $\frac{x + 4}{2x + 8}$

Question 4
Simplify $\frac{a}{bc^2} \times \frac{b^2c}{a}$

Question 5
Simply $\frac{3}{x} \div \frac{z^3}{xy}$

Question 6
Simplify $\frac{x + 1}{x + 2} \times \frac{x^2 + 6x + 8}{x^3 + 4x + 3}$
Chapter 13  Transposing formulae

Question 1

Transpose the following formula to make $x$ the subject. $y = 7x - 5$

Question 2

Transpose the following formula to make $x$ the subject. $y = \frac{1}{2x} + 1$

Question 3

Transpose the following formula to make $x$ the subject. $y = \frac{1 - x^2}{1 + x^2}$