3 Simplify $4m+7k-m+3k$.

..... [2]

3 Simplify.

$3x-2y+x+y$

..... [2]

1 Simplify.

$3a+7b-4a+b$

..... [2]

2 Simplify.

$4y^2+3y-y^2+2y$

..... [2]

1 Simplify.

$7c-5d+c+3d$

..... [2]

5 Expand.

$3(2x-1)$

..... [1]

3 Expand.

$3(x-2y)$

..... [1]

6 Expand.

$3x(2x^4-5)$

..... [2]

9 Expand $3p^2(4-3p)$.

..... [2]

4 Expand.

$x(3+x^2)$

..... [2]

4 Simplify fully.

(a) $3a-6b-2a+b$

..... [2]

(b) $7(x-3)-2(2x-1)$

..... [2]

10 Expand and simplify.

$$2(t+w)+3(w-t)$$

..... [2]

13 Expand and simplify.

$$6(t-q)-2(t-3q)$$

..... [2]

10 Expand and simplify.

(a) $2x-x(5-x^2)$

..... [2]

8 Expand and simplify.

$$4(2a+5b)-3(6b-3a)$$

..... [2]

9 Expand the brackets and simplify.

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

..... [2]

4 Factorise $x^3 - 2x$.

..... [1]

6 Factorise completely.

$$4 - 8x$$

..... [1]

9 Factorise completely.

$$12a^3 - 21a$$

..... [2]

9 Factorise completely.

(a) $21a^2 + 28ab$

..... [2]

12 Factorise completely.

$$x^3y^2 - xy$$

..... [2]

9 Factorise completely.

$14xy - 7y^2$

..... [2]

5 Factorise completely.

$8g - 2g^2$

..... [2]

13 Factorise completely.

(a) $18px - 27p$

..... [2]

12 Factorise completely.

(a) $4x^2y - 6xy^2$

..... [2]

5 Factorise completely.

(a) $42mk - 35m$

..... [2]

10 Factorise.

(a) $8x+14$

..... [1]

(b) $8ax^2-6bx^3$

..... [2]

2 Simplify.

$y\times 27-y\times 77$

..... [1]

9 **(a)** Factorise completely.

$$3x^2 - 12xy$$

..... [2]

(b) Expand and simplify.

$$(m-3)(m+2)$$

..... [2]

4 **(a)** Factorise.

$$2p^2 - pq$$

..... [1]

(b) Expand the brackets and simplify.

$$(p-7)(p+3)$$

..... [2]

12 Expand the brackets and simplify.

$$(4x-3y)(4x+3y)$$

..... [2]

3 Find the value of $x^2 - x$ when $x = -3$.

..... [1]

5 $y = mx + c$

Find the value of y when $m = -3$, $x = -2$ and $c = -8$.

$y =$ ..... [2]

4 $v = u - 9.8t$

Find the value of v when $u = 4$ and $t = -7$.

$v =$ ..... [2]

3 $v = u + at$

Find the value of v when $u = 30$, $a = -2$ and $t = 7$.

$v =$ ..... [2]

3 $P = 2a + b^2 - 3c$

Find P when $a = 5$, $b = -4$ and $c = -3$.

$P =$ ..... [2]

4 $V = 4mp^2$

(a) Find V when $m = 10$ and $p = -3$.

$V =$ ..... [2]

(b) Find the positive value of p when $V = 3200$ and $m = 2$.

$p =$ ..... [2]

9 $P = \dfrac{2wy^2}{3}$

Find the positive value of y when $P = 108$ and $w = 8$.

$y =$ ..... [3]

6 Maria buys n pencils that cost p cents each.
She pays with a $\$y$ note.

Find, in terms of n, p and y, the amount of change Maria receives.
Give your answer in cents.

..... cents [2]

5 A taxi fare, $\$F$, consists of a fixed charge of $\$x$ plus \$0.65 per kilometre travelled.

Find a formula for F for a journey of y kilometres.

..... [2]

12 One solution of the equation $ax^2 + b = 181$ is $x = 8$.
a and b are both positive integers **greater than 1**.

(a) Find the value of b.

$b =$ ..... [2]

(b) Write down the other solution of the equation $ax^2 + b = 181$.

$x =$ ..... [1]

5 Petra repairs cars.
The cost of a repair is a fixed charge of \$$C$ plus a charge of \$$h$ per hour.

Find an expression, in terms of C, h and n, for the total cost, \$$T$, of a repair that takes Petra n hours.

$T =$ ..... [2]

3 Complete these statements.

(a) When $x =$ ..... , $x+3=8$.

[1]

(b) When $7y = 63$, $10y =$ .....

[1]

(c) Show that $(2n-5)^2-13$ is a multiple of 4 for all integer values of n.

[3]