1 Show that $\frac{1}{6x^2+7x-5} \div \frac{1}{4x^2-1}$ simplifies to $\frac{ax+b}{cx+d}$ where a, b, c and d are integers.

.....

(3)

2 $2-\frac{x+2}{x-3}-\frac{x-6}{x+3}$ can be written as a single fraction in the form $\frac{ax+b}{x^2-9}$ where a and b are integers.

Work out the value of a and the value of b.

$a =$ .....

$b =$ .....

(4)

3 (a) Simplify $\dfrac{x^2 - 16}{2x^2 - 5x - 12}$

.....

(3)

(b) Make v the subject of the formula $w = \dfrac{15(t - 2v)}{v}$

.....

(3)

4 (a) Factorise $a^2 - b^2$

.....

(1)

(b) Hence, or otherwise, simplify fully $(x^2 + 4)^2 - (x^2 - 2)^2$

.....

(3)

5 (a) Simplify $m^3 \times m^4$

.....

(1)

(b) Simplify $(5np^3)^3$

.....

(2)

(c) Simplify $\dfrac{32q^9r^4}{4q^3r}$

.....

(2)

6 Expand and simplify $5(p + 3) - 2(1 - 2p)$

.....

(2)

7 (a) Simplify $\left(\frac{1}{m^2}\right)^0$

.....

(1)

(b) Simplify $\frac{8(x-4)}{(x-4)^2}$

.....

(1)

(c) Simplify $(3n^4w^2)^3$

.....

(2)