separate

full working hand written

1. Pick from the box an example of each of the following, (you may use old notes, books or the internet)

   (a) an expression, (b) an equation (c) a constant

   (d) a variable, (e) a term, (f) a coefficient

   (g) an index (h) an identity

$y \quad mx \quad c$	$3x^2 \quad 2x \quad 10$	$6x^2$	$a^2 \quad b^2 \quad (a \quad b)(a \quad b)$

2. Solve the equations:

   (a) $3(2x \quad 5) \quad (x \quad 8) \quad 6(3 \quad x)$ (b) $\frac{1}{2}(5x \quad 3) \quad \frac{1}{4}(7 \quad 2x) \quad 5$

3. Find the values of x and y that simultaneously satisfy:

   (a) $\begin{matrix} 3x & 2y & 4 \\ x & 2y & 36 \end{matrix}$ (b) $\begin{matrix} 7x & y & 25 \\ x^2 & y^2 & 25 \end{matrix}$

   For the equations in part (a), explain how you could have found the solution graphically.

4. Factorise the following:

   (a) $5x^2y \quad 2x$ (b)

5. Factorise fully the following:

   (a) $x^2 \quad 5x \quad 6$ (b) $x^2 \quad 5x \quad 6$ (c) $x^2 \quad 5x \quad 6$

   (d) $x^2 \quad 5x \quad 6$ (e) $3x^2 \quad 7x \quad 6$ (f) $\quad 9$

   (g) $6x^2 \quad 15x \quad 6$

6. (a) Make h the subject of $\frac{2}{Rt} \quad mgh \quad k^2h$.

   (b) Make h the subject of $2 \quad h \quad 6x^2 \quad 2xh$.

   (c) Make h the subject of $yh \quad \frac{10}{h}$.

   (d) Make h the subject of $y \quad 1 \quad \sqrt{3h \quad 1}$.

7. der than he was 11 years ago.

   (a)

   (b) How old is James now?

8. Write each of the following expressions as a single fraction in its simplest form:

   (a) $\frac{a}{b^2} \quad \frac{a^2}{b}$ (b) $2uv^2 \quad \frac{u}{v}$ (c) $\frac{1}{4x} \quad \frac{1}{6x}$

9. Simplify the following fractions:

   (a) $\frac{2(x \quad 2)^3}{(x \quad 2)(x \quad 4)}$ (b) $\frac{3y \quad 9}{y^2 \quad 9}$ (c) $\frac{6ab \quad 30b^2}{3(2a \quad 5b)}$