

## Collecting Like Terms

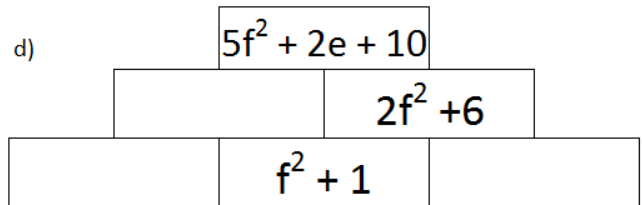
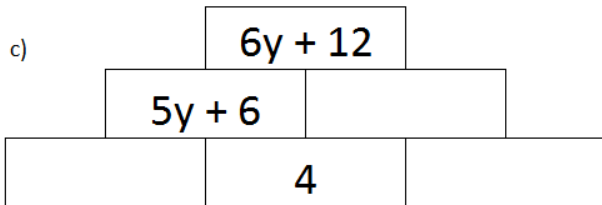
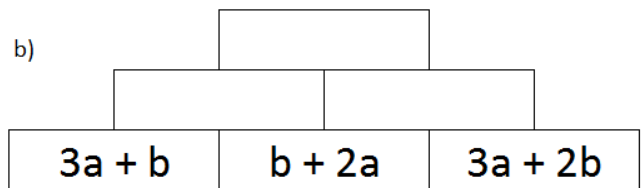
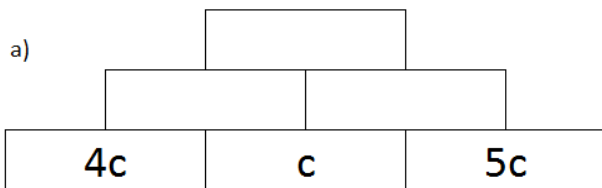
Q1. Simplify these expressions by collecting like terms.

- |                            |                            |                           |
|----------------------------|----------------------------|---------------------------|
| a) $a + a + a + a$         | b) $r + r + r + g + g$     | c) $4e + e + 2a - a$      |
| d) $4f + 5w + 3f - w$      | e) $5h + 8u + 5 - u$       | f) $6x + 4 + 5x + 8$      |
| g) $2w + 6b + 3w - 4b + 2$ | h) $4d + 3e - 3d - 3e$     | i) $4 + 3v - 2 + 5v + a$  |
| j) $3r + 10 - 2r - r - 4$  | k) $3d + 3f - f - 3d - 2f$ | l) $12 + t + 6g + 7 + 3g$ |

Q2. Expand these pairs of brackets:

- |                                  |                               |                                |
|----------------------------------|-------------------------------|--------------------------------|
| a) $ad + 5ad$                    | b) $4fg + fg + fg$            | c) $abc + 5acb - 2bac$         |
| d) $2x^2 + 4x^2$                 | e) $5x^2 + 4r^2 - x^2$        | f) $6d^2 + d - d^2 + 4d$       |
| g) $6y^2 + 10 + 3g^2 + 9g^2 + 2$ | h) $2m^2 + x^2 - 2m^2 + 4x^2$ | i) $y^2 + 3y^2 + y + y^2 + 4y$ |
| j) $ab^2 + ab^2 + 2b + 2a$       | k) $4r + r^2 + 3 + 7r + 2r^2$ | l) $4t + 3t^2 + 3 + 7t + 2j^2$ |

Q3. In each of these pyramids the cell above is the cell of the two directly beneath it. Complete the pyramids by collecting the like terms.



Q4. Write the perimeter of each shape using a simplifying algebraic expression.

