

## FACTORIZATION

### USING FACTORIZATION FOR CALCULATIONS

*Example*

Evaluate the following expressions:

|           |                      |           |                                |
|-----------|----------------------|-----------|--------------------------------|
| <b>a)</b> | $13^2 - 7^2$         | <b>b)</b> | $6.25^2 - 3.75^2$              |
|           | $= (13 + 7)(13 - 7)$ |           | $= (6.25 + 3.75)(6.25 - 3.75)$ |
|           | $= 20 \times 6$      |           | $= 10 \times 2.5$              |
|           | $= 120$              |           | $= 25$                         |

By factorising, evaluate the following:

- |           |  |  |                      |
|-----------|--|--|----------------------|
| <b>1.</b> | a) $8^2 - 2^2$                           | b) $16^2 - 4^2$                          | c) $49^2 - 1$        |
|           | d) $17^2 - 3^2$                          | e) $88^2 - 12^2$                         | f) $96^2 - 4^2$      |
| <b>2.</b> | a) $45^2 - 25$                           | b) $99^2 - 1$                            | c) $27^2 - 23^2$     |
|           | d) $66^2 - 34^2$                         | e) $999^2 - 1$                           | f) $225 - 8^2$       |
| <b>3.</b> | a) $8.4^2 - 1.6^2$                       | b) $9.3^2 - 0.7^2$                       | c) $42.8^2 - 7.2^2$  |
|           | d) $(8\frac{1}{2})^2 - (1\frac{1}{2})^2$ | e) $(7\frac{3}{4})^2 - (2\frac{1}{4})^2$ | f) $5.25^2 - 4.75^2$ |
| <b>4.</b> | a) $8.62^2 - 1.38^2$                     | b) $0.9^2 - 0.1^2$                       | c) $3^4 - 2^4$       |
|           | d) $2^4 - 1$                             | e) $1111^2 - 111^2$                      | f) $2^8 - 25$        |