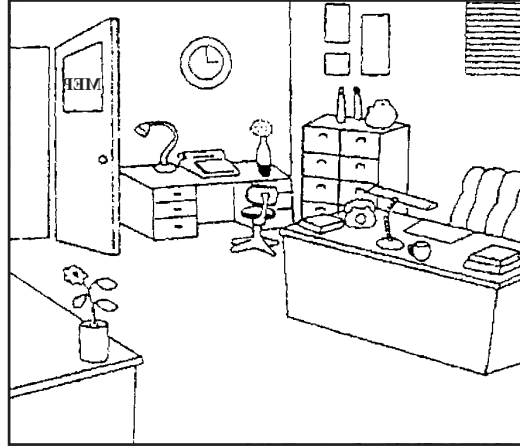# ACTIVITY 7.1 - 7.3   *Notes and Solutions*

Notes and solutions given only where appropriate.
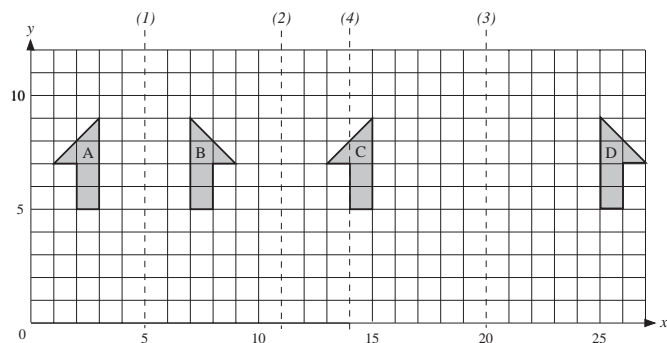
7.1   Correct reflection is:

7.2   There are many possible answers.
Here is one of them:

1.   Translate line by $\begin{pmatrix} -1 \\ 0 \end{pmatrix}$

2.   Translate line by $\begin{pmatrix} 0 \\ 2 \end{pmatrix}$

3.   Reflect new shape in $x = 3$

4.   Reflect new shape in $x = 6$

5.   Reflect new shape in $y = 6$

6.   Reflect new shape in $y = 12$

7.   Translate new shape by $\begin{pmatrix} -3 \\ 6 \end{pmatrix}$

8.   Reflect in $y = 6$

9.   Reflect in $x = 9$

(NB Ignore any parts of transformed shape that lie outside the wallpaper grid.)

7.3   1, 2, 3 and 4 shown on diagram.

Equation of mirror line is $x = 14$.

Extension
It remains the same; i.e. reflected in line $x = 14$.

ACTIVITY 7.4 *Notes and Solutions*

7.4   1.   (a) $\begin{pmatrix} 18 \\ 0 \end{pmatrix}$

           (b)   (i)   e.g. reflect F in line $x = 8$ and then reflect in line $x = 17$.

                  (ii)   Infinite number

     2.   (a)   Rotation, $180\,°$ about $(12, 7)$

           (b)   (i)   Reflect in $x = 12$, and in $y = 7$

                  (ii)   You can change the order, i.e. reflect in $y = 7$ and then $x = 12$.