Exercise 1

Paper 1 style · No calculator

1 6 marks SL 2.11 ●○○ Routine

The point $A(1, -3)$ lies on the graph of $y = f(x)$. Write down the coordinates of the image of A on each of the following graphs.

(a) $y = f(x) + 5$ **[1]**

(b) $y = f(x - 4)$ **[1]**

(c) $y = -f(x)$ **[1]**

(d) $y = f(-x)$ **[1]**

(e) $y = \frac{1}{2}f(x)$ **[1]**

(f) $y = f(3x)$ **[1]**

The markscheme is on the next page: try the question first. Written and verified by a practising IB mathematics teacher, produced with AI assistance; solved twice and recomputed by software. Not affiliated with or endorsed by the International Baccalaureate Organization.
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MARKSCHEME (a)

$(1, 2)$

A1

Total 1 mark

MARKSCHEME (b)

$(5, -3)$

A1

Total 1 mark

MARKSCHEME (c)

$(1, 3)$

A1

Total 1 mark

MARKSCHEME (d)

$(-1, -3)$

A1

Total 1 mark

MARKSCHEME (e)

$\left(1, -\frac{3}{2}\right)$

A1

Total 1 mark

MARKSCHEME (f)

$\left(\frac{1}{3}, -3\right)$

A1

Total 1 mark