

# Year 1 - Simple Graph Transformations

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## Question 1

Describe how  $y = f(x + 2)$  will transform the graph of  $y = f(x)$ .

- |                                                                  |                                                                   |
|------------------------------------------------------------------|-------------------------------------------------------------------|
| <input type="checkbox"/> Translate the graph 2 units to the left | <input type="checkbox"/> Translate the graph 2 units to the right |
| <input type="checkbox"/> Translate the graph 2 units up          | <input type="checkbox"/> Translate the graph 2 units down         |
- 

## Question 2

Describe how  $y = f(x) - 3$  will transform the graph of  $y = f(x)$ .

- |                                                                  |                                                                   |
|------------------------------------------------------------------|-------------------------------------------------------------------|
| <input type="checkbox"/> Translate the graph 3 units to the left | <input type="checkbox"/> Translate the graph 3 units to the right |
| <input type="checkbox"/> Translate the graph 3 units up          | <input type="checkbox"/> Translate the graph 3 units down         |
- 

## Question 3

Describe how  $y = f(2x)$  will transform the graph of  $y = f(x)$ .

- |                                                               |                                                                           |
|---------------------------------------------------------------|---------------------------------------------------------------------------|
| <input type="checkbox"/> Horizontal stretch by scale factor 2 | <input type="checkbox"/> Horizontal stretch by scale factor $\frac{1}{2}$ |
| <input type="checkbox"/> Vertical stretch by scale factor 2   | <input type="checkbox"/> Vertical stretch by scale factor $\frac{1}{2}$   |
- 

## Question 4

Describe how  $y = 6f(x)$  will transform the graph of  $y = f(x)$ .

- |                                                               |                                                                           |
|---------------------------------------------------------------|---------------------------------------------------------------------------|
| <input type="checkbox"/> Horizontal stretch by scale factor 6 | <input type="checkbox"/> Horizontal stretch by scale factor $\frac{1}{6}$ |
| <input type="checkbox"/> Vertical stretch by scale factor 6   | <input type="checkbox"/> Vertical stretch by scale factor $\frac{1}{6}$   |
- 

## Question 5

Describe how  $y = f\left(\frac{1}{3}x\right)$  will transform the graph of  $y = f(x)$ .

- |                                                               |                                                                           |
|---------------------------------------------------------------|---------------------------------------------------------------------------|
| <input type="checkbox"/> Horizontal stretch by scale factor 3 | <input type="checkbox"/> Horizontal stretch by scale factor $\frac{1}{3}$ |
| <input type="checkbox"/> Vertical stretch by scale factor 3   | <input type="checkbox"/> Vertical stretch by scale factor $\frac{1}{3}$   |
- 

## Question 6

Describe how  $y = f(x) + 1$  will transform the graph of  $y = f(x)$ .

- |                                                                 |                                                                  |
|-----------------------------------------------------------------|------------------------------------------------------------------|
| <input type="checkbox"/> Translate the graph 1 unit to the left | <input type="checkbox"/> Translate the graph 1 unit to the right |
| <input type="checkbox"/> Translate the graph 1 unit up          | <input type="checkbox"/> Translate the graph 1 unit down         |

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### Question 7

Describe how  $y = \frac{1}{2}f(x)$  will transform the graph of  $y = f(x)$ .

Horizontal stretch by scale factor 2

Horizontal stretch by scale factor  $\frac{1}{2}$

Vertical stretch by scale factor 2

Vertical stretch by scale factor  $\frac{1}{2}$

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### Question 8

Describe how  $y = f(x - 5)$  will transform the graph of  $y = f(x)$ .

Translate the graph 5 units to the left

Translate the graph 5 units to the right

Translate the graph 5 units up

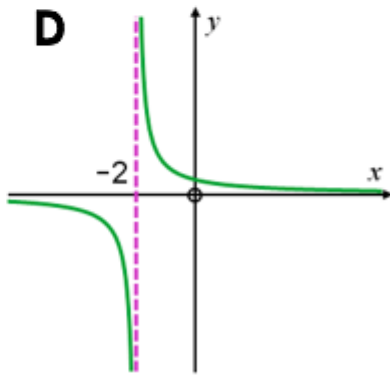
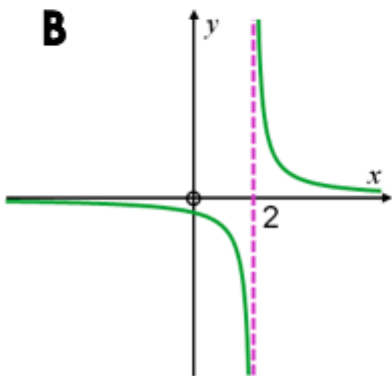
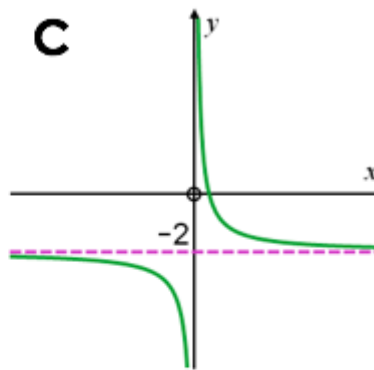
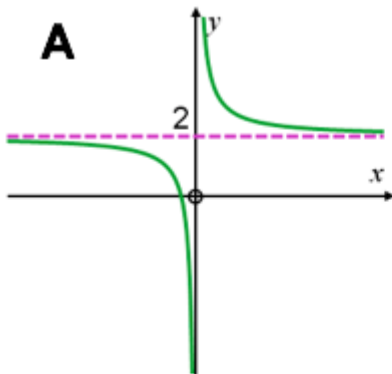
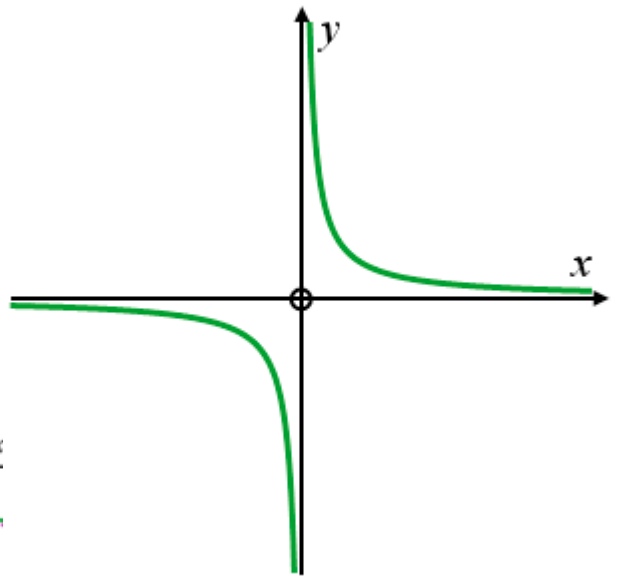
Translate the graph 5 units down

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### Question 9

The graph of  $y = f(x)$ , where  $f(x) = \frac{1}{x}$  is sketched to the right

Which of these graphs has equation  $y = f(x) + 2$ ?



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A

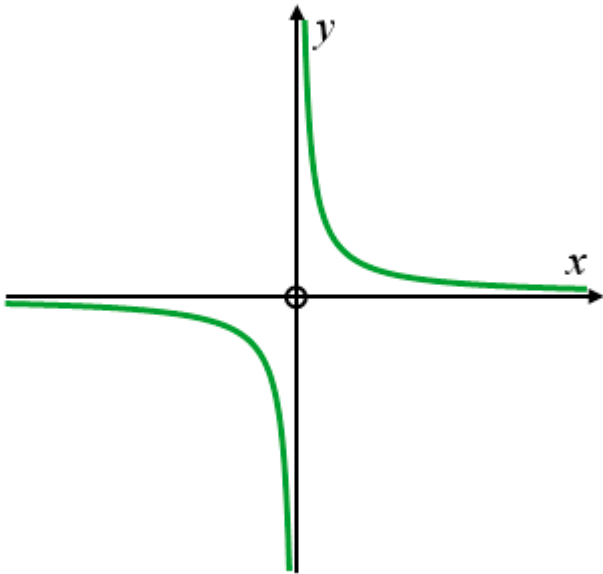
B

C

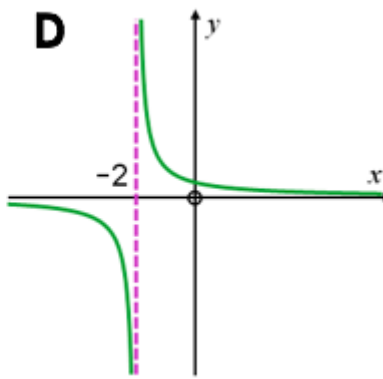
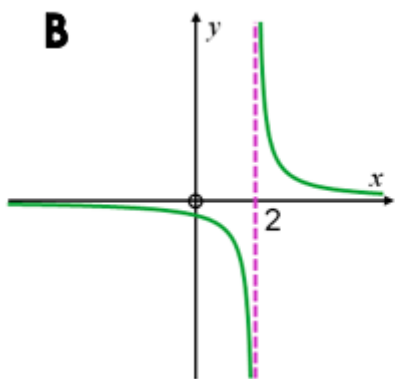
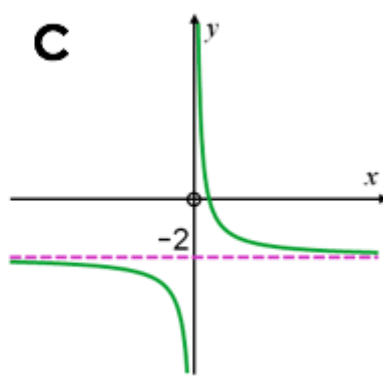
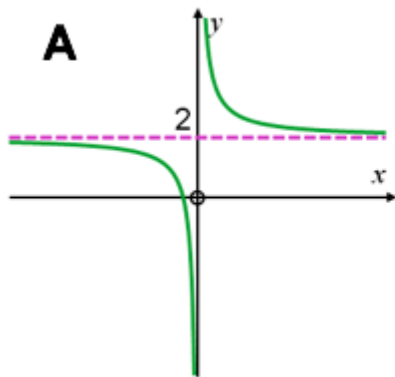
D

### Question 10

The graph of  $y = f(x)$ , where  $f(x) = \frac{1}{x}$  is sketched below.



Which of these graphs has equation  $y = f(x + 2)$ ?



A

B

C

D