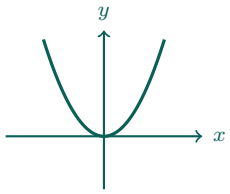
# Transforming Graphs

GCSE Mathematics • **Higher Tier** • Grades 8–9 • Non-calculator

Name: _____ Class: _____ Total: _____ / 50

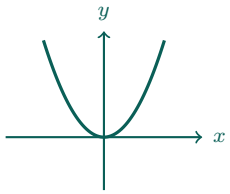
*Show all your working. Marks are given for correct method as well as the final answer.*

**1.** Describe the transformation from $y = f(x)$ to $y = f(x) + 3$. **[2 marks]**



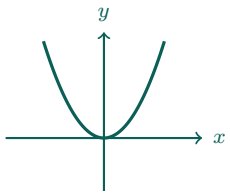

**Answer:** _____

**2.** Describe the transformation from $y = f(x)$ to $y = f(x) - 5$. **[2 marks]**



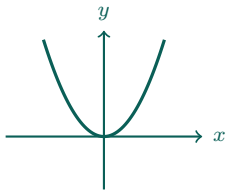

**Answer:** _____

**3.** Describe the transformation from $y = f(x)$ to $y = f(x + 2)$. **[2 marks]**



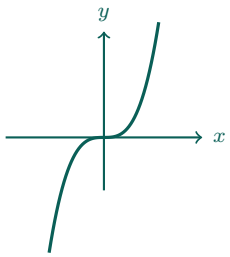

**Answer:** _____

**4.** Describe the transformation from $y = f(x)$ to $y = f(x - 4)$. **[2 marks]**



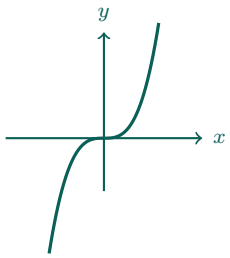

**Answer:** _____

**5.** Describe the transformation from $y = f(x)$ to $y = -f(x)$. **[2 marks]**



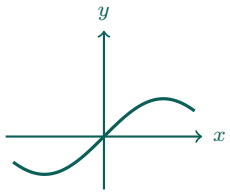

**Answer:** _____

**6.** Describe the transformation from $y = f(x)$ to $y = f(-x)$. **[2 marks]**



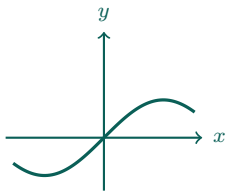

**Answer:** _____

**7.** Describe the transformation from $y = f(x)$ to $y = 3f(x)$. **[2 marks]**




**Answer:** _____

**8.** Describe the transformation from $y = f(x)$ to $y = f(2x)$. **[3 marks]**




**Answer:** _____

**9.** Describe the transformation from $y = f(x)$ to $y = f\left(\frac{1}{2}x\right)$. **[3 marks]**

**Answer:** _____

**10.** $(3, 5)$ lies on $y = f(x)$. Write down its image on $y = f(x) + 4$. **[2 marks]**

**Answer:** _____

**11.** $(3, 5)$ lies on $y = f(x)$. Write down its image on $y = f(x - 2)$. **[2 marks]**

**Answer:** _____

**12.** $(3, 5)$ lies on $y = f(x)$. Write down its image on $y = -f(x)$. **[2 marks]**

**Answer:** _____

**13.** $(3, 5)$ lies on $y = f(x)$. Write down its image on $y = f(-x)$. **[2 marks]**

**Answer:** _____

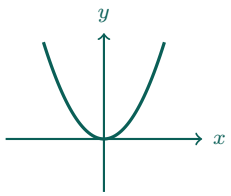
**14.** $(6, 2)$ lies on $y = f(x)$. Write down its image on $y = f(2x)$. **[3 marks]**

**Answer:** _____

**15.** $(4, 7)$ lies on $y = f(x)$. Write down its image on $y = 2f(x)$. **[2 marks]**

**Answer:** _____

**16.** $y = x^2$ has a minimum at $(0, 0)$. Write down the minimum of $y = (x - 3)^2$. **[2 marks]**




**Answer:** _____

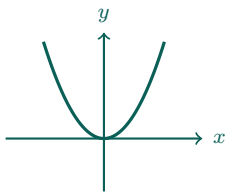
**17.** Write down the minimum of $y = (x + 1)^2 - 4$. **[3 marks]**

**Answer:** _____

**18.** Write down the maximum of $y = 5 - x^2$. **[3 marks]**

**Answer:** _____

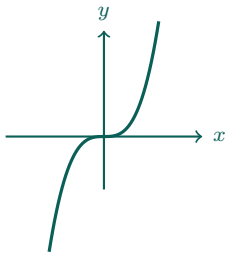
**19.** The graph of $y = f(x)$ has a minimum at $(2, -3)$.




**(a)** Write down the minimum of $y = f(x) + 7$. **[2 marks]**

**(b)** Write down the minimum of $y = f(x + 5)$. **[2 marks]**

**20.** The graph of $y = f(x)$ passes through $(-2, 6)$.




**(a)** Write down the image of that point on $y = -f(x)$. **[2 marks]**

**(b)** Write down the image of that point on $y = f(-x) + 1$. **[3 marks]**

**Answer:** _____

*Free to print and use at home or in class. Please do not re-host or sell. Written by Hampstead Tuition Centre from the published exam specifications.*