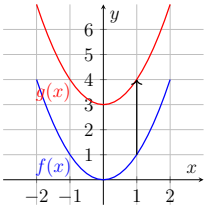
Function Transformations - Visual Question Guide

Questions 1-40

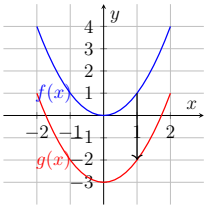
How to Use This Guide

Each question number corresponds to the question number in Blooket. Look at the graphs to understand what transformation is being asked about. The blue graph is f(x) and the red graph is g(x).

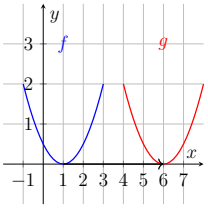
Question 1: $f(x) = x^2$, $g(x) = f(x) + 3$



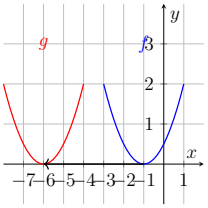
Question 2: $f(x) = x^2$, $g(x) = f(x) - 3$



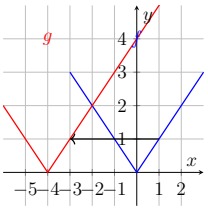
Question 3: $g(x) = f(x - 5)$



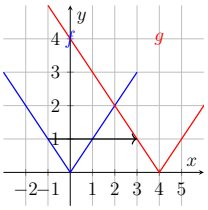
Question 4: $g(x) = f(x + 5)$



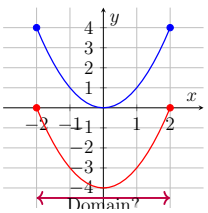
Question 5: $f(x) = |x| \rightarrow g(x) = |x + 4|$



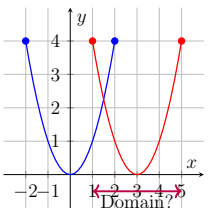
Question 6: $f(x) = |x| \rightarrow g(x) = |x - 4|$



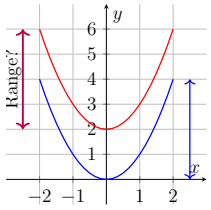
Question 7: Domain of $f(x) = x^2$ is $[-2, 2]$ $g(x) = f(x) - 4$. Domain of g = ?



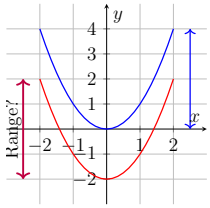
Question 8: Domain of $f(x) = x^2$ is $[-2, 2]$ $g(x) = f(x - 3)$. Domain of g = ?



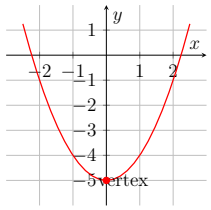
Question 9: Range of $f = [0, 4]$
$g(x) = f(x) + 2$. Range of $g = ?$



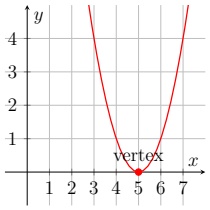
Question 10: Range of $f = [0, 4]$
$g(x) = f(x) - 2$. Range of $g = ?$



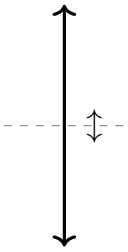
Question 11: Vertex at $(0, -5)$



Question 12: Vertex at $(5, 0)$

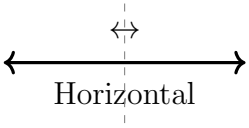


Question 13: Vertical Translation



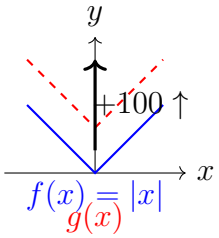
Vertical

Question 14: Horizontal Translation

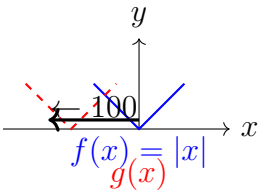


Horizontal

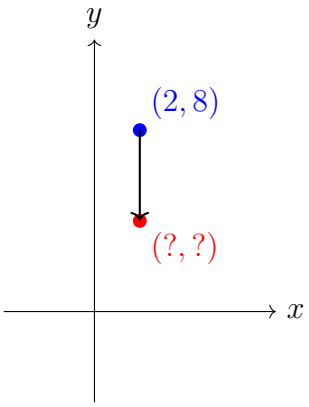
Question 15: $g(x) = |x| + 100$



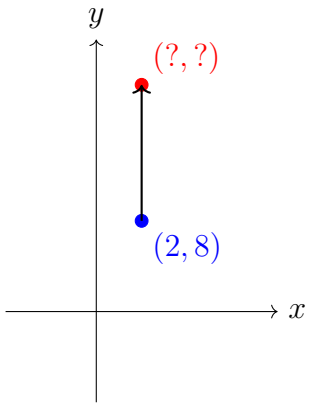
Question 16: $g(x) = |x + 100|$



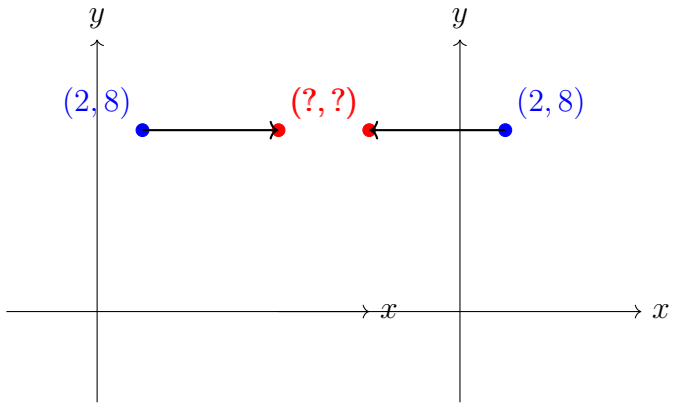
Point Transformation Questions (17-20)



Q17: $g = f(x) - 3$



Q18: $g = f(x) + 3$

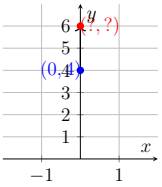


Q19: $g = f(x - 3)$ **Q20:** $g = f(x + 3)$

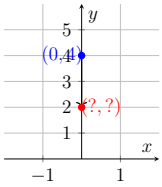
Transformation Rules (Questions 21-24)

Question	Equation	Direction
21	$g(x) = f(x) + k$ (k ¿ 0)	↑
22	$g(x) = f(x) - k$ (k ¿ 0)	↓
23	$g(x) = f(x - h)$ (h ¿ 0)	→
24	$g(x) = f(x + h)$ (h ¿ 0)	←

Question 25: y-intercept $(0, 4)$, $g = f(x) + 2$



Question 26: y-intercept $(0, 4)$, $g = f(x) - 2$



Coordinate Effects (Questions 27-28)

Question 27: Vertical translation effect on x-coordinates

$$(x, y) \xrightarrow{\text{vertical}} (?, ?)$$

$$\updownarrow$$

x stays same

$$x' = x$$

Question 28: Horizontal translation effect on y-coordinates

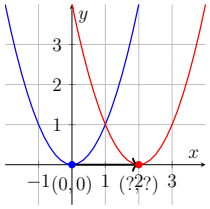
$$(x, y) \xrightarrow{\text{horizontal}} (?, ?)$$

$$\leftrightarrow$$

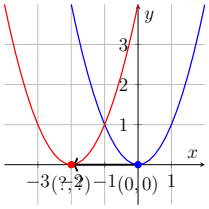
y stays same

$$y' = y$$

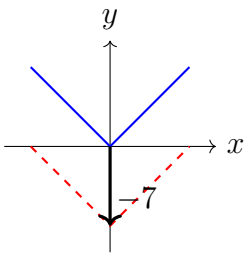
Question 29: $f(x) = x^2 \rightarrow g(x) = (x-2)^2$



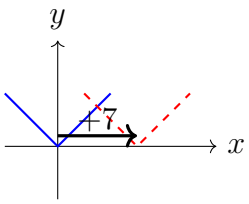
Question 30: $f(x) = x^2 \rightarrow g(x) = (x+2)^2$



Question 31: $|x|$ shifted 7 units $\downarrow$

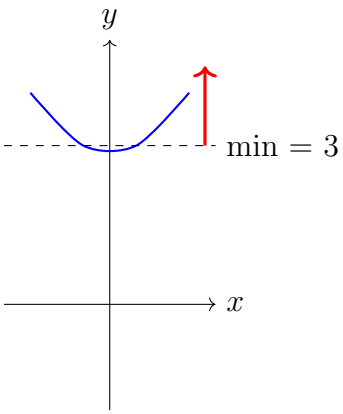


Question 32: $|x|$ shifted 7 units $\rightarrow$

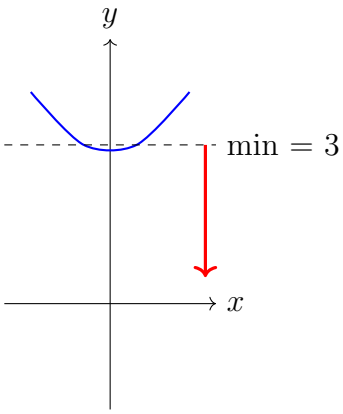


Extrema and Correspondence (Questions 33-36)

Q33-34: Minimum value changes

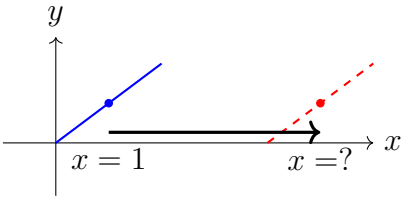


Q33: $g = f + 5$, min = ?

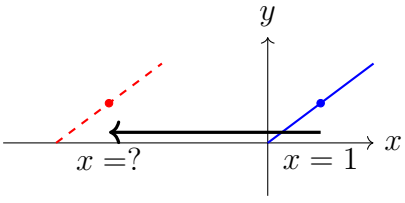


Q34: $g = f - 5$, min = ?

Q35: $f(x) \rightarrow f(x-4)$, $x = 1$ maps to?

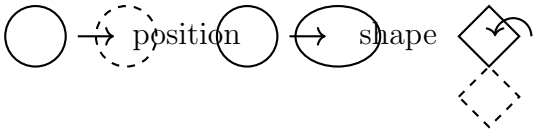


Q36: $f(x) \rightarrow f(x+4)$, $x = 1$ maps to?

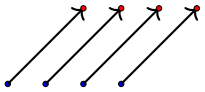


Definitions (Questions 37-38)

Question 37: Transformation = Change in graph's...



Question 38: Translation = Every point moves...



same distance & direction

Value Calculations (Questions 39-40)

Question	Given	Find
39	$f(2) = 10$, $g(x) = f(x) + 3$	$g(2) = ?$ $10 + 3 = ?$
40	$f(2) = 10$, $g(x) = f(x) - 3$	$g(2) = ?$ $10 - 3 = ?$