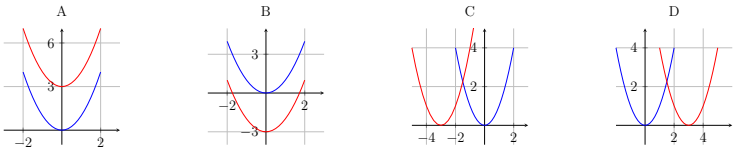
Function Transformations - Visual Answer Choices

Questions 1-40

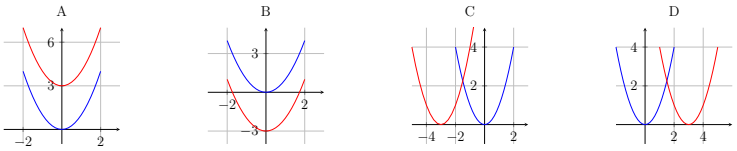
Instructions

For each question, look at the blue graph (original function f) and choose which red graph shows the correct transformation g. Each question has 4 choices: A, B, C, or D.

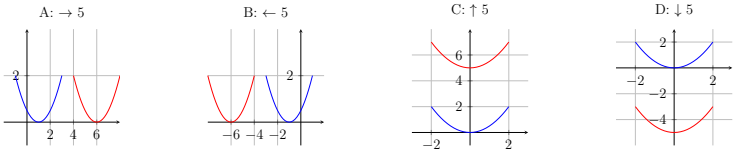
Question 1: Starting with $f(x) = x^2$ (blue), which red graph shows the correct transformation?



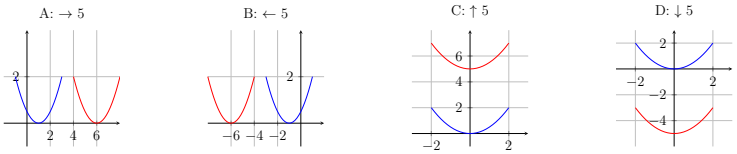
Question 2: Starting with $f(x) = x^2$ (blue), which red graph shows the correct transformation?



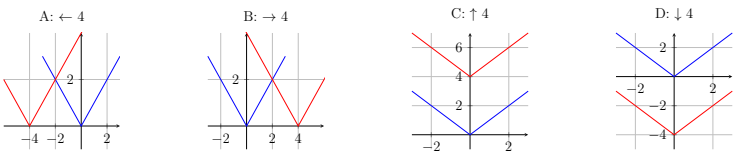
Question 3: Which transformation is shown?



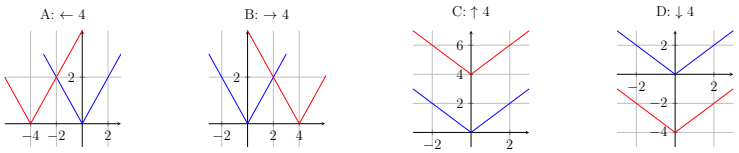
Question 4: Which transformation is shown?



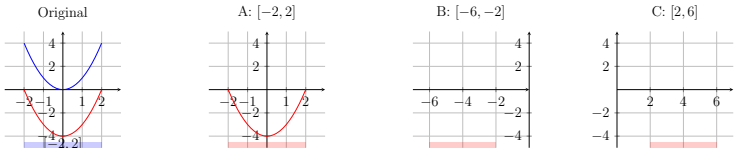
Question 5: $f(x) = |x|$ (blue) transforms to which red graph?



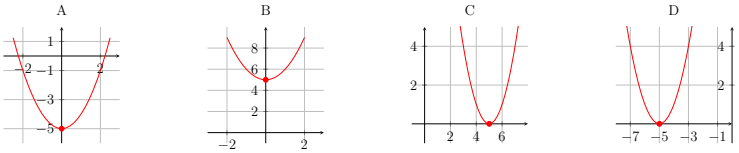
Question 6: $f(x) = |x|$ (blue) transforms to which red graph?



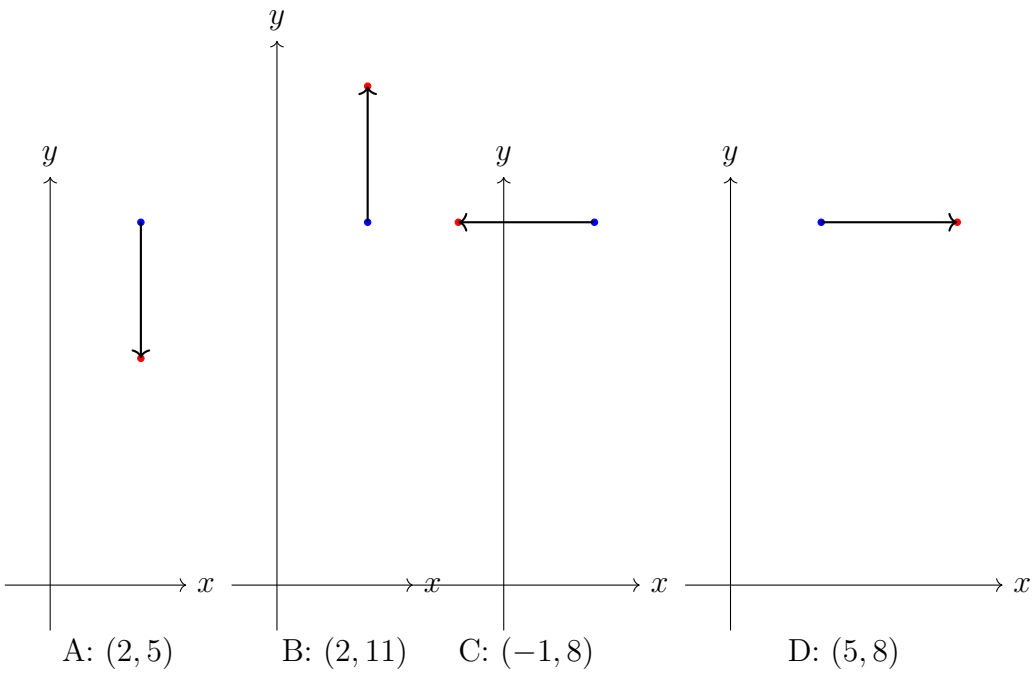
Question 7: Domain of f is $[-2, 2]$. After transformation, what is domain of g?



Question 11: Which parabola has vertex at $(0, -5)$?



Question 17: Point $(2, 8)$ on f becomes which point on g?



A: $(2, 5)$ B: $(2, 11)$ C: $(-1, 8)$ D: $(5, 8)$

Questions 21-24: Match the equation pattern to the transformation direction:

Q21: $f(x) + k$, $k > 0$	A: $\uparrow$	B: $\downarrow$	C: $\rightarrow$	D: $\leftarrow$
Q22: $f(x) - k$, $k > 0$	A: $\uparrow$	B: $\downarrow$	C: $\rightarrow$	D: $\leftarrow$
Q23: $f(x - h)$, $h > 0$	A: $\uparrow$	B: $\downarrow$	C: $\rightarrow$	D: $\leftarrow$
Q24: $f(x + h)$, $h > 0$	A: $\uparrow$	B: $\downarrow$	C: $\rightarrow$	D: $\leftarrow$

Questions 8-40 Reference Guide

Q#	Type	Look For
8	Domain shift with $f(x - 3)$	Which interval shows correct shift?
9-10	Range changes	Which interval shows new range?
12	Vertex at $(5, 0)$	Which parabola has correct vertex?
13-14	Direction definitions	Match arrows to movement type
15-16	Large shifts (+100)	Which direction moves graph?
18-20	Point transformations	Track where $(2, 8)$ moves
25-26	Y-intercept changes	Where does $(0, 4)$ move?
27-28	Coordinate effects	What stays constant?
29-30	Vertex shifts	Where does $(0, 0)$ move?
31-32	Absolute value shifts	Match equation to graph
33-34	Min value changes	Calculate new minimum
35-36	X-value mapping	Where does $x = 1$ map to?
37-38	Definitions	Match description to term
39-40	Value calculations	Calculate $g(2)$ from $f(2) = 10$

Answer Key (For Teacher Only)

1: A
2: B
3: A
4: B
5: A
6: B
7: A
8: C
9: A
10: B 11: A
12: C
13: A
14: B
15: A
16: C
17: A
18: B
19: C
20: B 21: A
22: B
23: C
24: D
25: A
26: B
27: A
28: A
29: A
30: B 31: A
32: C
33: A
34: B
35: A
36: B
37: A
38: A
39: A
40: B