

CHAPTER 3

30. **Step 1:** $-2, -1, 0, -5, 3, 2, -2$

Step 2: no, $(-2, -5)$, $(-2, 2)$

31. **Step 1:** $f(x^2) = \sqrt{x^2 - 3} - 3$

Step 2: $[3, \infty)$

32. **Step 1:** $(-5, -3)$

Step 2: None

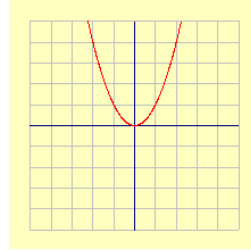
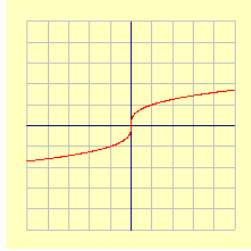
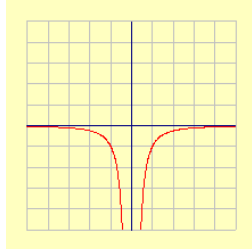
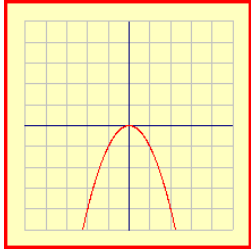
Step 3: $(-6, -4)$, $(-4, -4)$

33. **Step 1:** $(1, 2)$

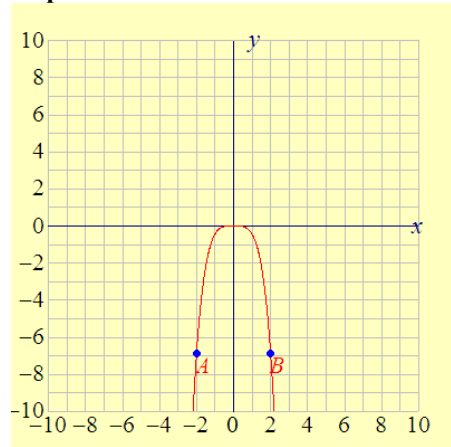
Step 2: Two: $(2, 0)$, $(0, 0)$

Step 3: $\left(\frac{1}{2}, \frac{3}{2}\right)$, $\left(\frac{5}{2}, \frac{-5}{2}\right)$

34. Step 1:



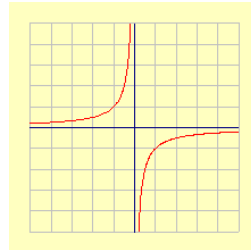
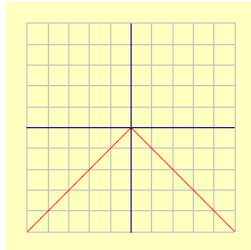
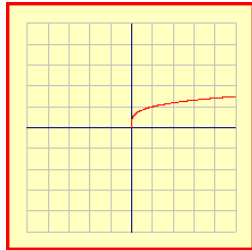
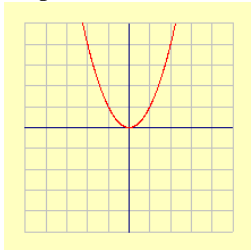
Step 2:



$$\mathbf{A:} \left(\boxed{-2}, \boxed{\frac{-48}{7}} \right)$$

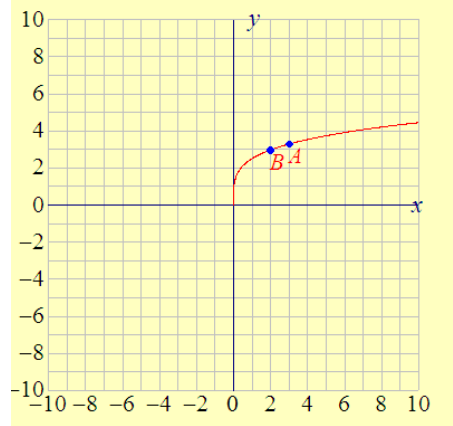
$$\mathbf{B:} \left(\boxed{2}, \boxed{\frac{-48}{7}} \right)$$

35. Step 1:



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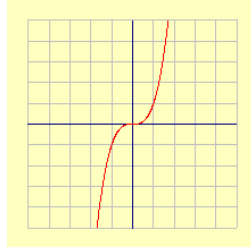
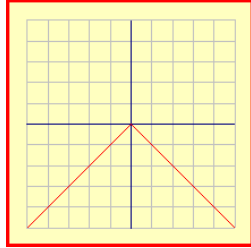
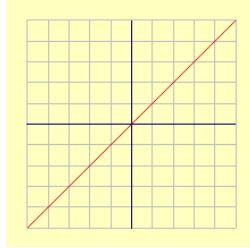
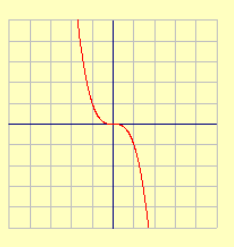
Step 2:



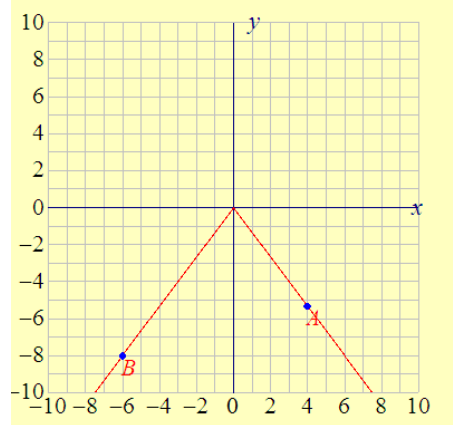
A: (,)

B: (,)

36. Step 1:



Step 2:

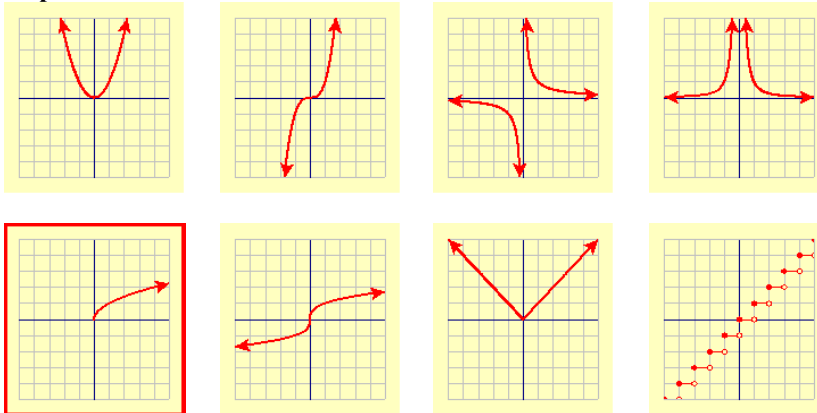


A: (,)

B: (,)

37. **Step 1:** $f(x) = \sqrt{x}$

Step 2:



Step 3:

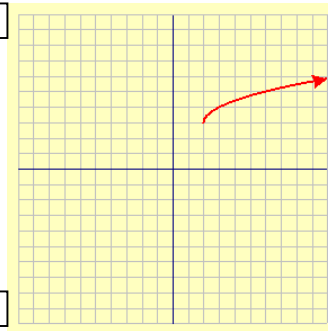
Horizontal Shift A) Left **B) Right** C) None Units

Stretch/Compress A) Stretch B) Compress **C) None**

x-Axis Reflection A) Yes **B) No**

y-Axis Reflection A) Yes **B) No**

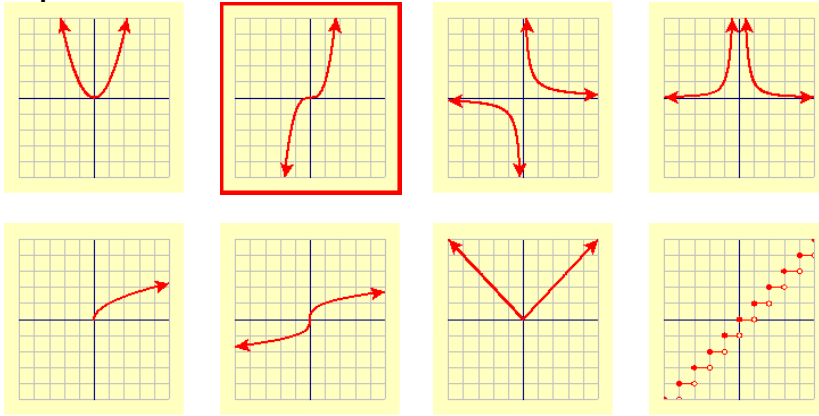
Vertical Shift **A) Up** B) Down C) None Units



Step 4: $[2, \infty)$, $[3, \infty)$

38. Step 1: $f(x) = x^3$

Step 2:



39. Step 1: -3

Step 2: -5

Step 3: -4

Step 4: -4

40. 9

41. Step 1: $(f + g)(x) = 4x - 5$

Step 2: $\left(\frac{f}{g}\right)(x) = \frac{3x}{x - 5}$

42. Step 1: $(f \circ g)(x) = \frac{1}{3x}$

Step 2: $(g \circ f)(x) = \frac{1}{3x}$

43. Step 1: $S^{-1} = \{ (4, 3), (-8, 6), (8, 5), (3, -4) \}$

Step 2: Domain: $\{4, -8, 8, 3\}$, Range: $\{3, 6, 5, -4\}$

44. $\left(\frac{x + 2}{3}\right)^3$