WORK PACKET
RADICAL FUNCTIONS

Find the domain of each of the following radical functions in interval notation.

A) $f_{(x)} = \sqrt{x+4} - 2$

B) $f_{(x)} = 2\sqrt{4-x} + 1$

C) $f_{(x)} = \sqrt{2x+3} + 1$

D) $f_{(x)} = \sqrt{x^2 - 4}$

E) $f_{(x)} = \sqrt{x^2}$

F) $f_{(x)} = \frac{1}{2}\sqrt{6-x} - 3$

G) $f_{(x)} = -\sqrt{x+5} - 8$

H) $f_{(x)} = \sqrt{2-x} + 1$

I) $f_{(x)} = 2\sqrt{x+7} - 5$

Find the range for each of the following.

A) $f_{(x)} = \sqrt{x+5} - 3$

B) $f_{(x)} = -\sqrt{x-3} + 2$

C) $f_{(x)} = 2\sqrt{x-4} + 3$

D) $f_{(x)} = -3\sqrt{5-x} + 6$

E) $f_{(x)} = \sqrt{4-x} - 3$

F) $f_{(x)} = \sqrt{x-7} + 5$

Find the point of origin for each of the following radical functions.

A) $f_{(x)} = \sqrt{x+4} - 2$

B) $f_{(x)} = 2\sqrt{4-x} + 1$

C) $f_{(x)} = \sqrt{x} - 4$

D) $f_{(x)} = -\sqrt{x-3}$

E) $f_{(x)} = \sqrt{x^2}$

F) $f_{(x)} = \frac{1}{2}\sqrt{6-x} - 3$

G) $f_{(x)} = -\sqrt{x+5} - 8$

H) $f_{(x)} = \sqrt{2-x} + 1$

I) $f_{(x)} = 2\sqrt{x+7} - 5$

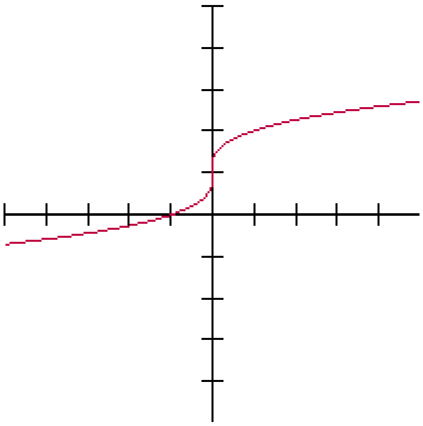
Why is the graph of the function $f_{(x)} = \sqrt{-x}$ moving towards the left rather than the right?

Explain why the graph of the function $f_{(x)} = \sqrt{x^2}$ is identical to that of $f_{(x)} = |x|$.

To find the domain of a radical function that has an even index, why do you need to set the radicand ≥ 0?

Match the appropriate graph with its equation below. Explain why each of your solutions is true.

A



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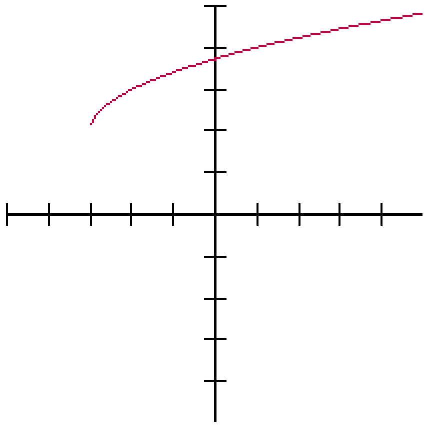

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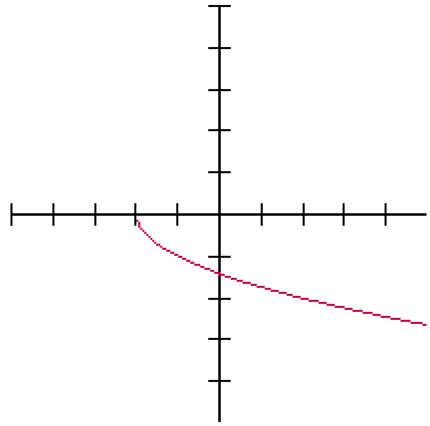

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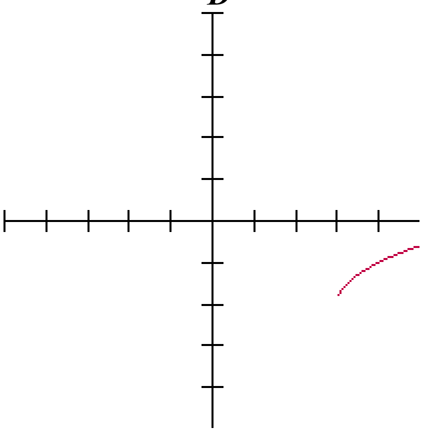

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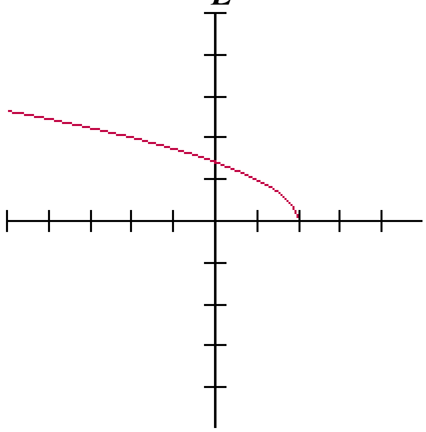

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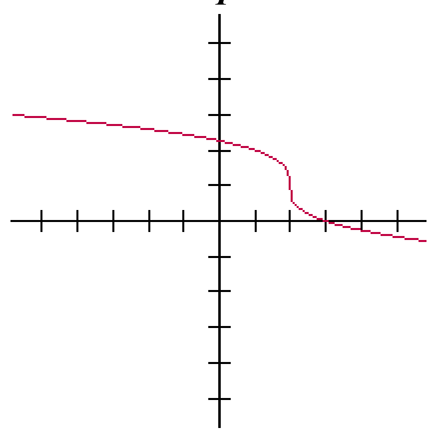


1) $f_{(x)} = \sqrt{x+3} + 2$

2) $f_{(x)} = \sqrt{x-3} - 2$

3) $f_{(x)} = \sqrt[3]{x} + 1$

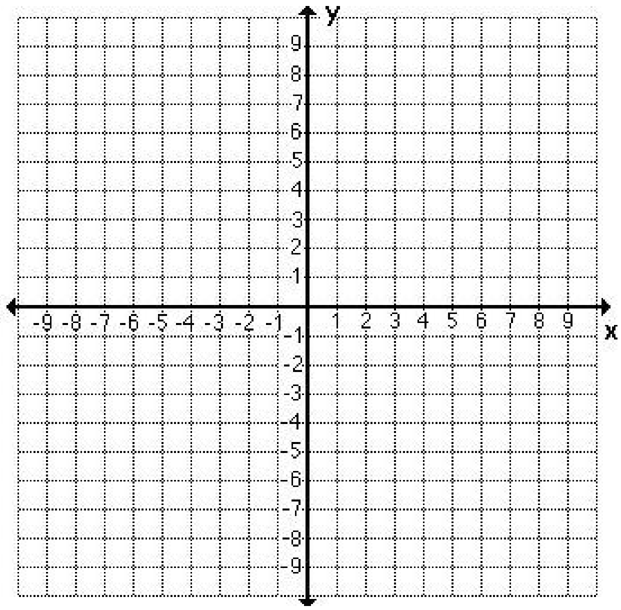
4) $f_{(x)} = -\sqrt[3]{x-2} + 1$

5) $f_{(x)} = -\sqrt{x+2}$

6) $f_{(x)} = \sqrt{2-x}$

Graph each of the following radical functions. ***Find all required information.***

A) $f_{(x)} = \sqrt{x-3} + 2$



Point of Origin:

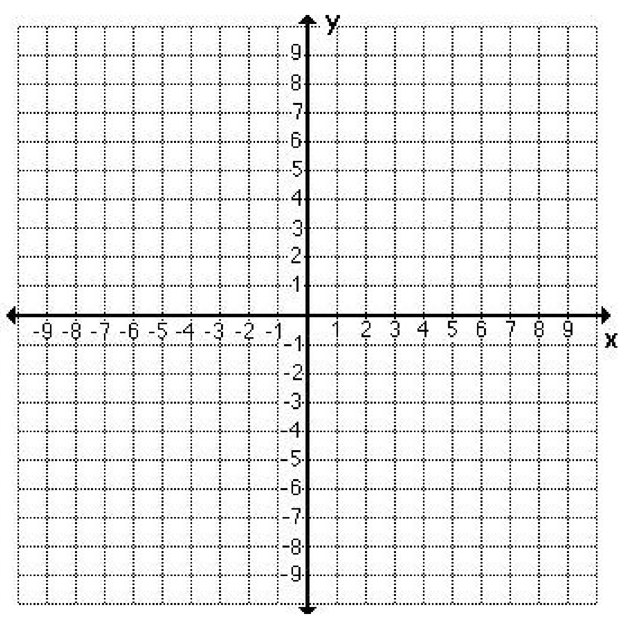
Y-intercept:

X-intercepts:

Range:

Domain:

B) $f_{(x)} = -\sqrt{x-3} + 1$



Point of Origin:

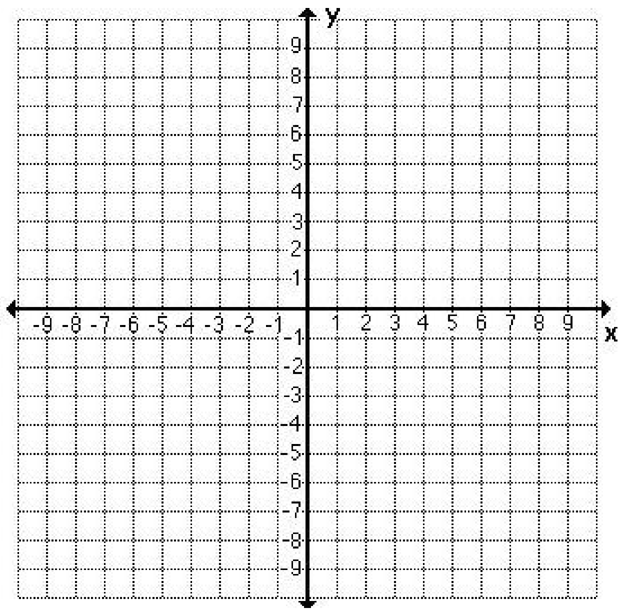
Y-intercept:

X-intercepts:

Range:

Domain:

C) $f_{(x)} = \sqrt{3-x} + 1$



Point of Origin:

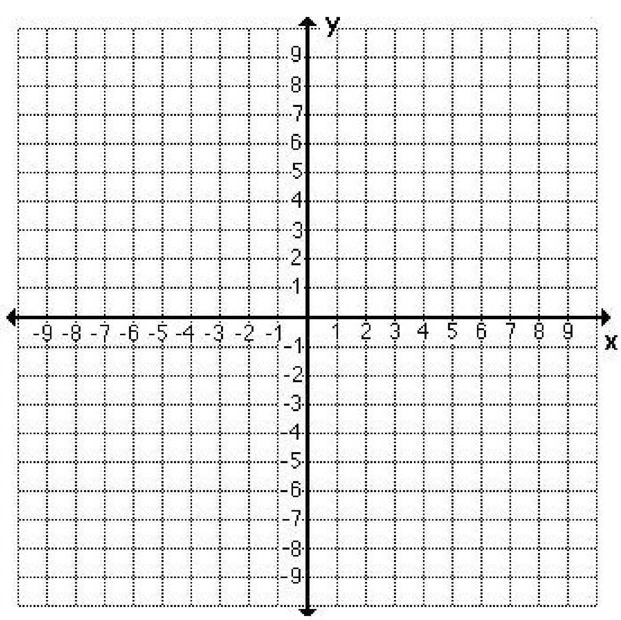
Y-intercept:

X-intercepts:

Range:

Domain:

D) $f_{(x)} = 2\sqrt{x} - 4$



Point of Origin:

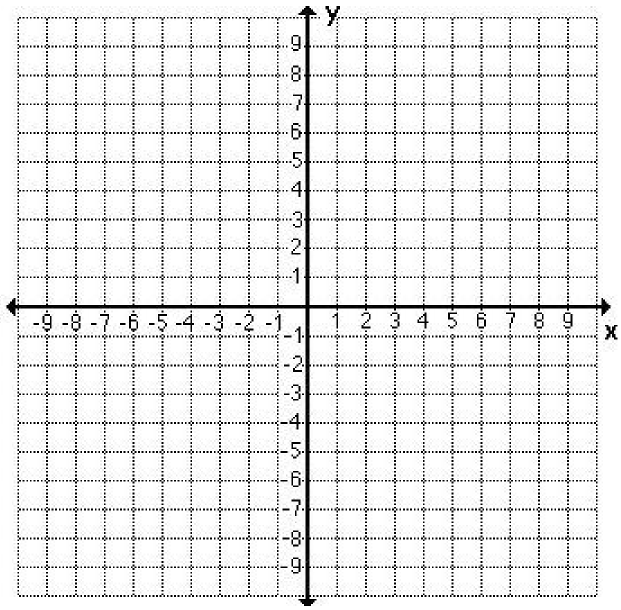
Y-intercept:

X-intercepts:

Range:

Domain:

E) $f_{(x)} = -\sqrt{-x}$



Point of Origin:

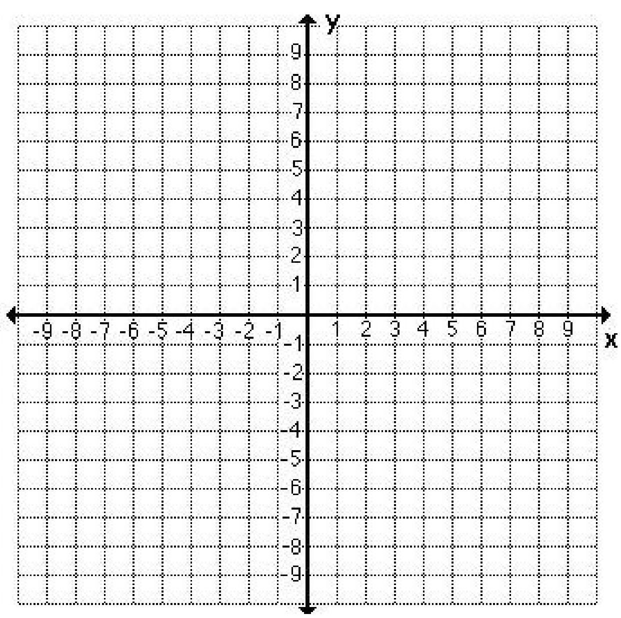
Y-intercept:

X-intercepts:

Range:

Domain:

F) $f_{(x)} = \sqrt[3]{x+2} + 3$



Point of Origin:

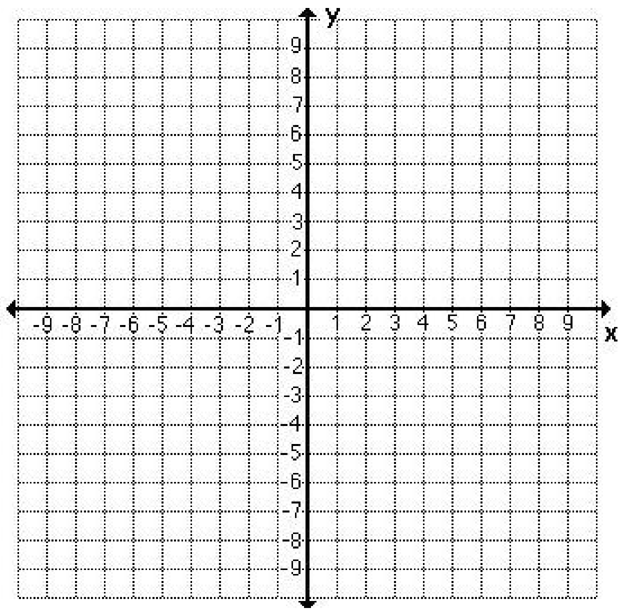
Y-intercept:

X-intercepts:

Range:

Domain:

G) $f_{(x)} = -\sqrt[3]{x-3} - 2$



Point of Origin:

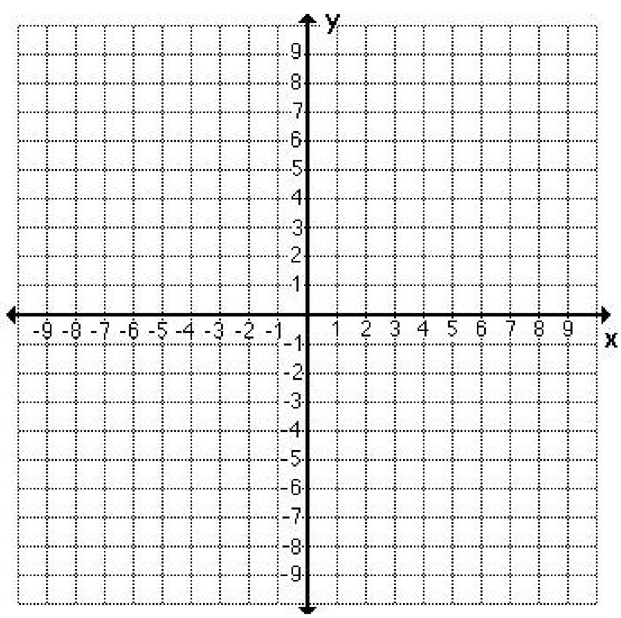
Y-intercept:

X-intercepts:

Range:

Domain:

H) $f_{(x)} = \sqrt[3]{x-6}$



Point of Origin:

Y-intercept:

X-intercepts:

Range:

Domain:

Why are the graphs of $y = \sqrt[3]{x}$ **and** $y = -\sqrt[3]{-x}$ **identical?**