Whiteboard Review

Please pick up:

A whiteboard
A marker
A felt piece (for an eraser)

Simplify the radical

$\sqrt[4]{128x^7y^7}$

$2xy\sqrt[4]{8x^3y^3}$

$\sqrt[4]{128x^7y^7}$

$\sqrt[4]{64 \cdot 2\ x\,x\,x\,x\,x\,x\,x\ y\,y\,y\,y\,y\,y\,y}$

$xy\sqrt[4]{64 \cdot 2x^3y^3}$

$xy\sqrt[4]{8 \cdot 8\ 2\ x^3y^3}$

$4\ 2\ 4\ 2\ 2\ 1$

$2\ 2\ 2\ 2\ 2\ 2\ 2\ 2$

$2xy\sqrt[4]{8x^3y^3}$

Solve for r.

$3646 = 1 + 5(4r+17)^{\frac{3}{2}}$

$-1 \quad -1$

16

$\frac{3645}{5} = \frac{5(4r+17)^{3/2}}{5}$

$(729)^2 = \left(\sqrt{(4r+17)^3}\right)^2$

$\sqrt[3]{729^2} = \sqrt[3]{(4r+17)^3}$

$\left(\sqrt[3]{729}\right)^2 = 4r+17$

$9^2 = 4r+17$

$81-17 = 4r$

$\frac{64}{4} = \frac{4r}{4}$ check ✓

$16 = r$

Multiply

$x^{1/2} \cdot x^{1/5}$

$x^{7/10}$

$x^{1/2} \cdot x^{1/5}$

$x^{5/10} \cdot x^{2/10}$

$x^{5/10+2/10}$

$x^{7/10}$

Graph, giving at least 4 exact points. Find the domain, range, and vertical and horizontal asymptotes.

$$f(x) = \frac{8}{x-2} + 1$$

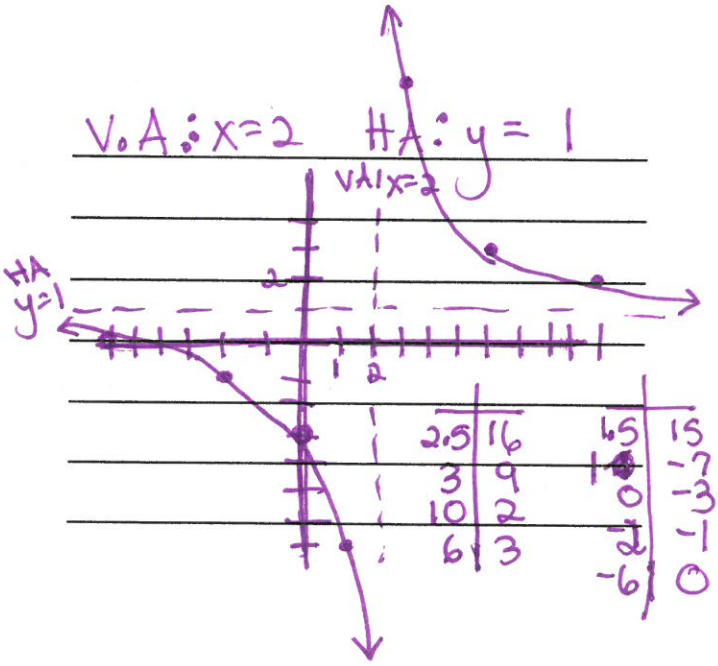
$D: (-\infty, 2) \cup (2, \infty)$

$R: (-\infty, 1) \cup (1, \infty)$

$VA: x = 2$

$HA: y = 0$

V.A: $x=2$ H.A: $y=1$



Solve for p.

$\sqrt{-10+7p} = p$

2, 5

$(\sqrt{-10+7p})^2 = p^2$

$-10+7p = p^2$

$0 = p^2 - 7p + 10$

$0 = (p-5)(p-2)$

$p = 5, 2$ ✓✓

then check them

Simplify.

$$\left(\frac{\sqrt[3]{a^2}}{\sqrt{b}}\right)^{-6}$$

$$\frac{b^3}{a^4}$$

$$\left(\frac{a^{2/3}}{b^{1/2}}\right)^{-6} = \frac{a^{2/3 \cdot -6}}{b^{1/2 \cdot -6}}$$

$$\frac{a^{-12/3}}{b^{-6/2}} = \frac{a^{-4}}{b^{-3}} \qquad \frac{b^3}{a^4}$$

Find the inverse.

y = 4x + 5

$$y = \frac{x-5}{4}$$

$$x = 4y + 5$$

$$\frac{x-5}{4} = \frac{4y}{4}$$

$$\frac{x-5}{4} = y$$

Graph, using at least 4 exact points.
Find the domain, range, and
tell how it was changed from the parent graph.

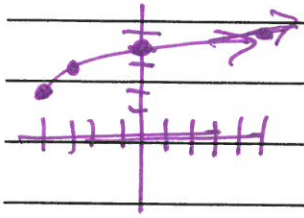
$$f(x) = \sqrt{x+4} + 2$$

$D: [-4, \infty)$

$R: [2, \infty)$

Translated left 4, up 2

translate left 4, up 2 ⇓ vertex $(-4, 2)$ } you MUST have vertex on graph



-4	2
-3	3
0	4
5	5

$D: [-4, \infty)$

$R: [2, \infty)$

Does the data show direct or inverse variation? Use this information to find the missing value.

x	0.5	-0.5	20	-1
y	10	-10	?	-5

Inverse

$y = \frac{5}{x}$, *so* $y = \frac{1}{4}$

Inverse

$y = \frac{5}{x}$ so do $y = \frac{5}{20}$

$y = \frac{1}{4}$

xy 5 5 5 ← $xy = k = 5$ If xy is a constant, you have inverse variation

$y = \frac{k}{x}$

Graph at least 5 exact points.
Find the domain, range, and
Tell how it was changed from the parent graph.

$$f(x) = -\sqrt[3]{x-5} - 4$$

$D: (-\infty, \infty)$

$R: (-\infty, \infty)$

Right 5, down 4, reflection over x-axis

Reflected over x-axis
Translated right 5, down 4

5 | -4 ← vertex MUST be on graph!

$y = -\sqrt[3]{x-5} - 4$		
-3	-2	$-\sqrt[3]{8} - 4$
4	-3	$-\sqrt[3]{-1} - 4$
5	-4	$-\sqrt[3]{0} - 4$
6	-5	$-\sqrt[3]{1} - 4$
13	-6	$-\sqrt[3]{8} - 4$

-8
-1
0
1
8

translate parent x's right 5 THEN substitute them into equation

Find x when y = 5, if y varies inversely as x and x = 6 when y = -18 } use pair first

① get equation

$y = \frac{k}{x}$

$-18 = \frac{k}{6}$

$k = -108$

$y = \frac{-108}{x}$

$5 = \frac{-108}{x}$ *OR use* $x_1y_1 = x_2y_2$ ② substitute in $y = 5$ to solve

$x = -21.6$