Math 2 – Honors
Unit 4 – Radical & Rational Functions
QUIZ Review Practice

Name_____
Date_____ Pd____

➢ Change each expression into its equivalent form and simplify if possible:

1. $\sqrt[3]{x^2}$ $x^{2/3}$

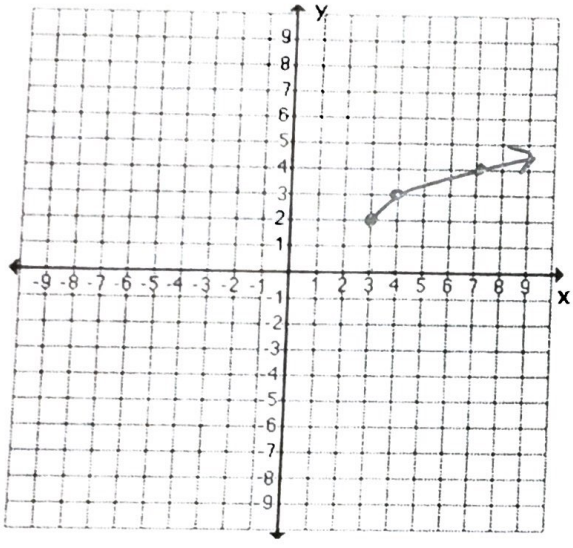
2. $64^{-1/3}$ $\frac{1}{\sqrt[3]{64^1}} = \frac{1}{4}$

3. $7x^{-1/5}$ $\frac{7}{\sqrt[5]{x^1}}$

4. $\sqrt[4]{5x^3}$ $(5x^3)^{1/4}$ $5^{1/4}\,x^{3/4}$ $\sqrt[4]{5x^3}$

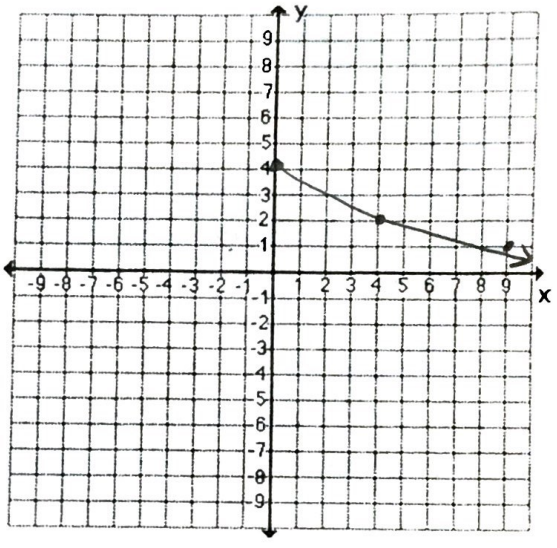
➢ Graph each function. Then state the Domain and the Range.

5. $y = \sqrt{x-3} + 2$



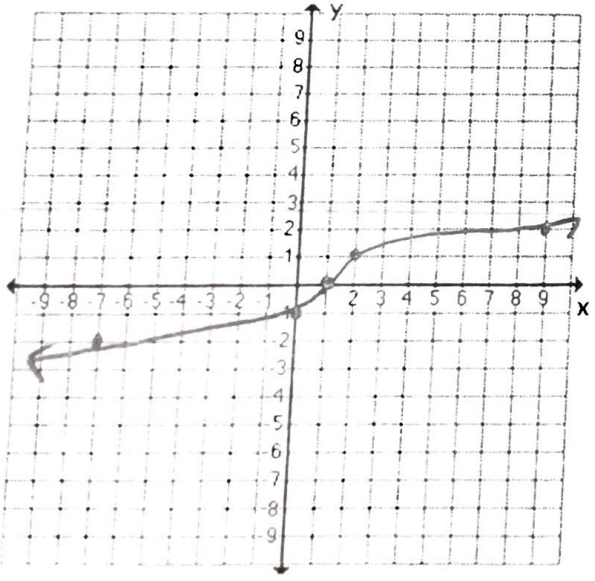
D: $[3,\infty)$ R: $[2,\infty)$

6. $y = -\sqrt{x} + 4$



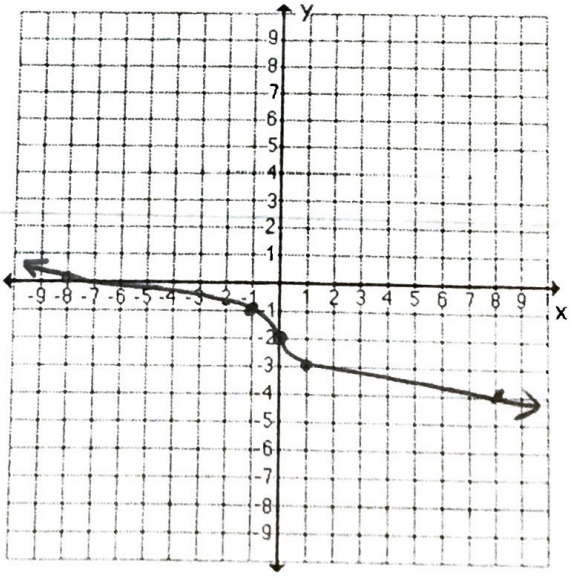
D: $[4,\infty)$ R: $(-\infty,4]$

7. $y = \sqrt[3]{x-1}$



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

8. $y = -\sqrt[3]{x} - 2$



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

➢ Write an equation that describes the following function:

9. The parent function $y = x^3$ is translated 2 units to the left and one unit down.

$y = (x+2)^3 - 1$

10. The parent function $y = \sqrt{x}$ is translated 3 units to the right and reflected over the $x - axis$.

$y = -\sqrt{x-3}$

11. The parent function $y = \sqrt[3]{x}$ is compressed vertically by a factor of $\frac{1}{2}$ and then translated 2 units up.

$y = \frac{1}{2}\sqrt[3]{x} + 2 = y = \frac{1}{2}\sqrt[3]{x} + 2$

➢ Solve each radical equation. Be sure to check for extraneous solutions.

12. $\frac{5\sqrt{x+7}}{5} = \frac{25}{5}$

$(\sqrt{x+7})^2 = (5)^2$

$x+7 = 25$

$-7 \quad -7$

$x = 18$ ✓

13. $\sqrt{x+8} + 4 = x$

$-4 \quad -4$

$(\sqrt{x+8})^2 = (x-4)^2$

$x+8 = (x-4)(x-4)$

$x+8 = x^2 - 8x + 16$

$-x-8 \quad -x \quad -8$

$0 = x^2 - 9x + 8$

$0 = (x-8)(x-1)$

$x = 8 \quad x = 1$ ✓

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

$3x-1 = 2x+4$

$-2x \quad -2x$

$x-1 = 4$

$+1 \quad +1$

$x = 5$ ✓

15. Doctors can approximate the Body Surface Area of an adult (in $square\ meters$) using an index called BSA where H is height in $centimeters$ and W is weight in $kilograms$: $BSA = \sqrt{\frac{H \cdot W}{3600}}$

Find the BSA of an adult who is $170\ cm$ tall and weighs $68\ kg$.

$= x$

$x = \sqrt{\frac{(170)\cdot(68)}{3600}} = \sqrt{\frac{11560}{3600}} \approx 1.79\ m^2$