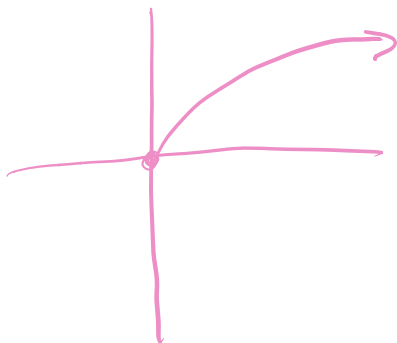


③ Domain of A Radical Function

$$f(x) = \sqrt{x}$$



to find domain $\rightarrow$ set radicand
to be greater than or equal
to 0 and solve.

$\rightarrow$ all value(s) that CANNOT be
in the domain

Ex Find the domain of the following

a) $g(x) = \sqrt{x+2}$

$$\begin{array}{r} x+2 \geq 0 \\ -2 \quad -2 \\ \hline x \geq -2 \end{array}$$

OR

$$D: \{x \mid x \geq -2\}$$
$$[-2, \infty)$$

b) $h(x) = \sqrt{9-x}$

$$\begin{array}{r} 9/x \geq 0 \\ -9 \quad -9 \end{array}$$

$$\begin{array}{r} -1/x \geq -1 \\ -1 \quad -1 \end{array}$$

$$x \leq 9$$

$$D: \{x \mid x \leq 9\}$$

~~$$[0, 9]$$~~

$$(-\infty, 9]$$

④ Finding $\sqrt{a^2}$

$$\sqrt{a^2} = |a|$$

ex simplify

$$a) \sqrt{(-16)^2} = |-16| = \boxed{16}$$

$$b) \sqrt{(3b)^2} = |3b| = \boxed{3|b|}$$

⑤ cube roots, odd and even roots

• cube roots

• notation

$$\sqrt[3]{a}$$

root/index

Not

$$3\sqrt{a}$$

Square root

CAC.



Ex simplify

CUBE ROOTS

$$a) \sqrt[3]{8} = \boxed{2}$$

$$b/c \quad 2 \cdot 2 \cdot 2 = 8 \checkmark$$

$$b) \sqrt[3]{-27} = \boxed{-3}$$

$$b/c \quad -3 \cdot -3 \cdot -3 = -27$$

$$c) \sqrt[3]{-\frac{216}{125}} = \boxed{-\frac{6}{5}}$$

$$b/c \quad -\frac{6}{5} \cdot -\frac{6}{5} \cdot -\frac{6}{5} = -\frac{216}{125}$$

even/odd roots

Ex simplify

$$a) \sqrt[5]{32} = \boxed{2}$$

$$b/c \quad 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 = 32 \checkmark$$

$$b) \sqrt[4]{16} = \boxed{2}$$

$$b/c \quad 2 \cdot 2 \cdot 2 \cdot 2 = 16 \checkmark$$