

22-05-251. For the following **cubic** function:

$$f(x) = 1x^3 - 5x$$

a. Make a representative sketch of the function. Significant points should be in correct quadrants.

b. State the Domain and the Range

$$\{ \text{_____} < x < \text{_____} \}$$

$$\{ \text{_____} < f(x) < \text{_____} \}$$

c. Indicate on the sketch and state the following.

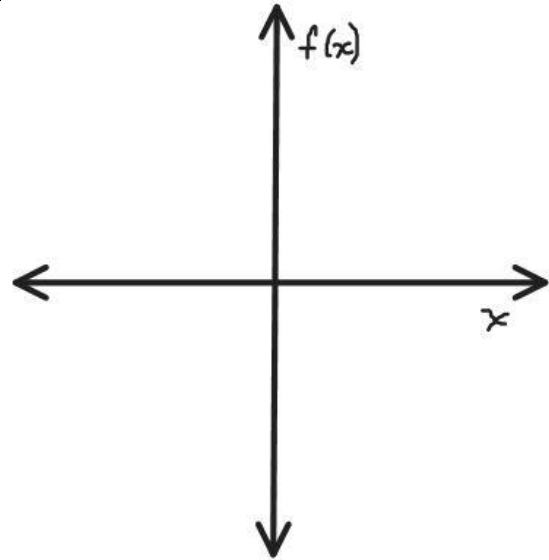
$$\text{Vertex: } (\text{_____}, \text{_____})$$

$$\text{Axis of Symmetry: } x = \text{_____}$$

d. Evaluate the function at $x = 3.5$

$$f(3.5) = \text{_____}$$

e. Remark below on any symmetry:



f. Indicate on the sketch and state:

$$y - \text{intercept: } (\text{___}, \text{_____})$$

'zeros' [x- intercept(s)] if any

$$(\text{___}, \text{___}) ; (\text{___}, \text{___}) , \dots$$

g. State the relative (local) minimum and / or maximum value(s) of the function:

h. Solve for x:

$$2 = 1x^3 - 5x$$

$$x = \text{_____}$$

2. For the following **exponential** function:

$$f(x) = 10 * 3^{x-2}$$

a. Make a representative sketch of the function. Significant points should be in correct quadrants.

b. State the Domain and the Range

$$\{ \text{_____} < x < \text{_____} \}$$

$$\{ \text{_____} < f(x) < \text{_____} \}$$

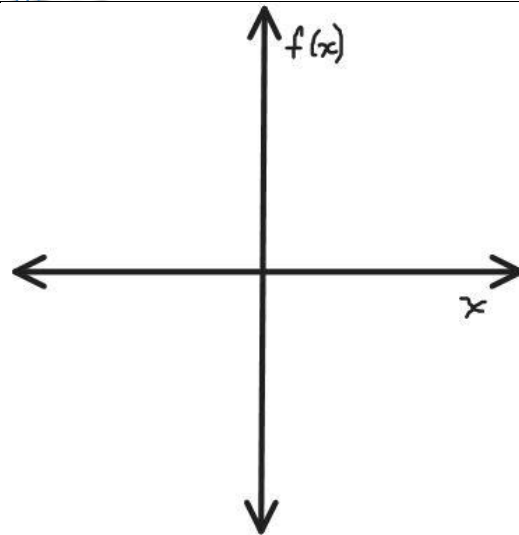
c. Indicate on the sketch and state the following.

Asymptote: $y = \text{_____}$

Axis of Symmetry: $x = \text{_____}$

d. Evaluate the function for an $x = 4.2$

$$f(4.2) = \text{_____}$$



d. Indicate on the sketch and state:

y-intercept: (_____, _____)

'zeros' [x-intercept(s)] if any

(_____, _____) ; (_____, _____)

e. state the minimum or maximum value of the function if any:

f. Solve for x.

$$270 = 10 * 3^{x-2}$$

$x = \text{_____}$

Can you do without graphing tool?

3. Deema is saving for a home renovation. She deposits \$50.00 every month into a new high-interest savings account that earns 4.60%, compounded monthly.

a) What will be the value in Deema's account after 4 years?

b) How much interest will she have earned after 4 years?