

$$f(x) = x^4 + 2x^3 - 36x^2 - 2x + 35$$

$f(x) = x^4 - 36x^2 - 2x + 35$, use your calculator to state the following:

Set your **windows** to look like:

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NORMAL FLOAT AUTO REAL RADIAN HP
DISTANCE BETWEEN TICK MARKS ON AXIS 0
WINDOW
Xmin=-10
Xmax=10
Xscl=1
Ymin=-500
Ymax=100
Yscl=1
Xres=1
X=0.07575757575757
TraceStep=0.1515151515...
    
```

Zeroes: -7, -1, 1, 5

Type of Symmetry: neither

Relative Maximum(s): (-0.028, 35.028)

Relative Minimum(s): (3.575, -177.527)

Absolute Max/Min: (-5.047, -480.189)

Domain: $(-\infty, \infty)$ Range: $[-480.189, \infty)$

Intervals of increase: $(-5.047, -0.028)$ $(3.575, \infty)$

Intervals of decrease: $(-\infty, -5.047)$ $(-0.028, 3.575)$

End behavior: $x \rightarrow -\infty, f(x) \rightarrow \underline{\infty}$
 $x \rightarrow \infty, f(x) \rightarrow \underline{\infty}$

Solve the following radical equations.

34. $\sqrt{21y-3} = 2y+1$

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

$$21y - 3 = 4y^2 + 4y + 1$$

$$0 = 4y^2 - 17y + 4$$

$$0 = (4y - 1)(y - 4)$$

35. $-4 = \sqrt[3]{5x+1}$

$x = \underline{-13}$

$$-64 = 5x + 1$$

$$-65 = 5x$$

$$-13 = x$$

36. $\sqrt[3]{3m-2} = \sqrt[3]{33-4m}$

$m = \underline{5}$

$$3m - 2 = 33 - 4m$$

$$7m = 35$$

$$m = 5$$

37. $\sqrt{a-2}+8=3$

$\sqrt{a-2} = -5$

$a-2 = 25$

$a = 27$ is ext.

$a =$ _____
no solution

38. $\sqrt{4x+5} = -x$

$4x+5 = x^2$

$0 = x^2 - 4x - 5$

$0 = (x-5)(x+1)$

$x = 5$ $x = -1$
is ext.

$x =$ $x = -1$

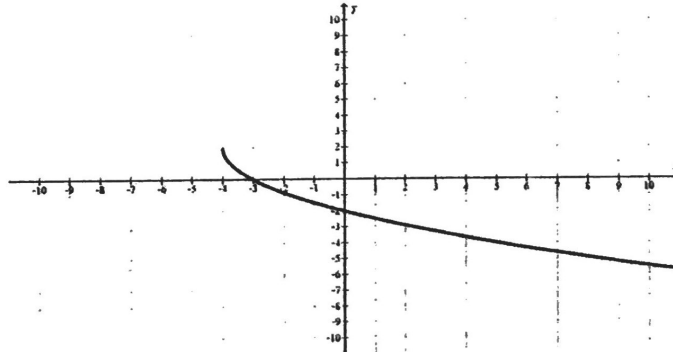
For each question below, place the letter of the correct answer on the line beside the number.

C 39. Which transformations are being applied to the parent function in the equation:

$j(x) = -4\sqrt[3]{x-2}$

- a) Reflection over the x-axis, vertical stretch, horizontal shift left
- b) Reflection over the x-axis, vertical shrink, horizontal shift right
- c) Reflection over the x-axis, vertical stretch, horizontal shift right
- d) Vertical shrink, horizontal shift left, vertical shift down

Based on the graph of $m(x)$ to the below, answer the following questions.



40. The domain of $m(x)$ is:

a) $[-3, \infty)$

b) $[-4, \infty)$

c) $[-2, \infty)$

d) $(-\infty, \infty)$

B