2. For the given function, find all the relative extrema. Find all critical points and use a sign chart to find relative maximums, minimums and false alarms. Show your sign graph. Clearly label all relative maximums or minimums. SHOW ALL WORK OR NO CREDIT WILL BE GIVEN!

$$y = 2x^3 - 21x^2 + 60x - 20$$

Checkpoint to make sure your entered your function in your calculator correctly:

When x = 6, y = 16

3. Find all the important points (critical points, maximums, minimums, and inflection points) for the function below using the techniques we learned in class. In order to save you some time, I have completed some of the calculations for you. Use the derivatives I've given you and complete all your work, including your first and second derivative sign charts. Use the information you find to draw an accurate sketch of the graph. Label any maximum or minimum points, and any inflection points on your graph with their coordinates.

$$y = -\frac{1}{4}x^4 + \frac{4}{3}x^3 + \frac{5}{2}x^2 + 10$$

$y' = -x(x+1)(x-5)$, $y'' = -3x^2 + 8x + 5$ *(can't be factored)*

Checkpoint to make sure your entered your function in your calculator correctly:

When x = 6, y = 64

2. For the given function, find all the relative extrema. Find all critical points and use a sign chart to find relative maximums, minimums and false alarms. Show your sign graph. Clearly label all relative maximums or minimums. SHOW ALL WORK OR NO CREDIT WILL BE GIVEN!

33 pts

$$y = 2x^3 - 21x^2 + 60x - 20$$

Checkpoint to make sure your entered your function in your calculator correctly:

When x = 6, y = 16

$y' = 6x^2 - 42x + 60$

$= 6(x^2 - 7x + 10)$

$= 6(x-2)(x-5)$

crit pts: 2, 5

inc dec inc y'

\+ − +

y

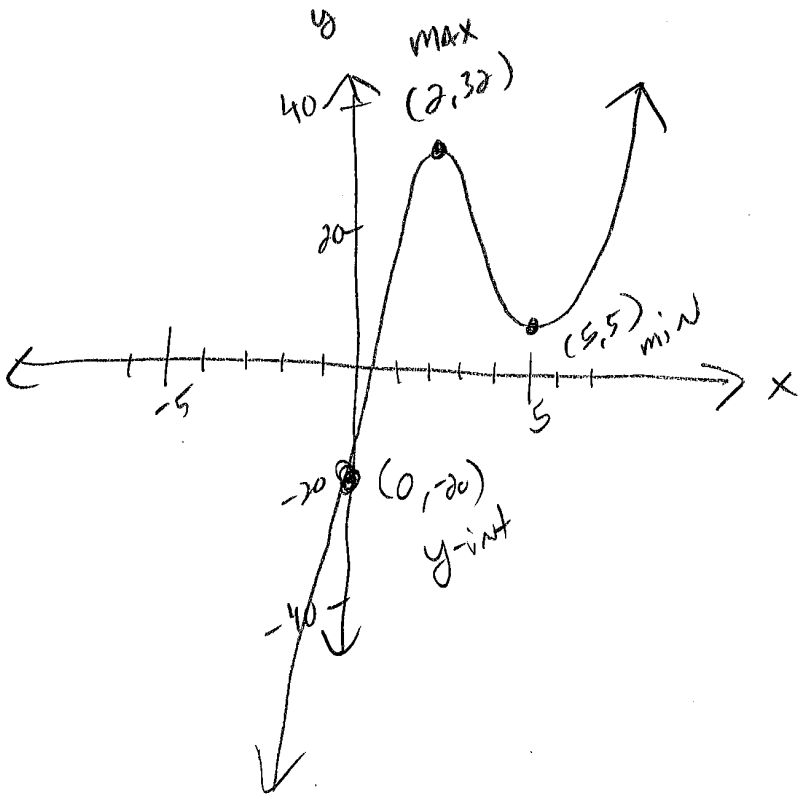
x

2 5

max min

(2, 32) max y-int: (0, −20)

(5, 5) min



3. Find all the important points (critical points, maximums, minimums, and inflection points) for the function below using the techniques we learned in class. In order to save you some time, I have completed some of the calculations for you. Use the derivatives I've given you and complete all your work, including your first and second derivative sign charts. Use the information you find to draw an accurate sketch of the graph. Label any maximum or minimum points, and any inflection points on your graph with their coordinates.

33 pts

$$y = -\frac{1}{4}x^4 + \frac{4}{3}x^3 + \frac{5}{2}x^2 + 10$$

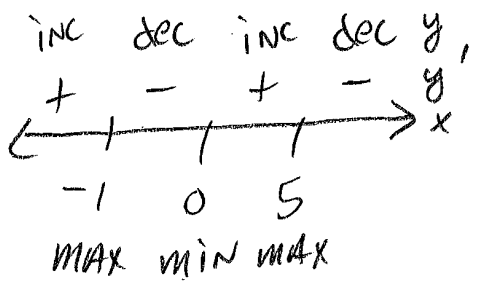
From Quad Formula: $x = \frac{4 \pm \sqrt{31}}{3}$

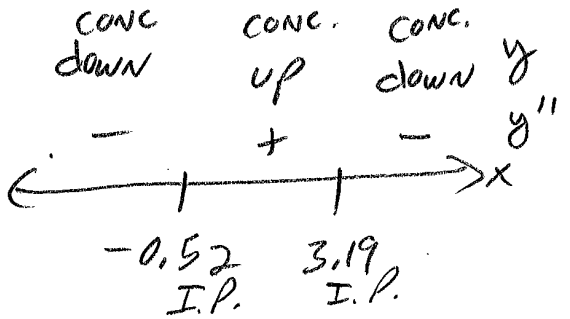
$y' = -x(x+1)(x-5)$, $y'' = -3x^2 + 8x + 5$ *(can't be factored)*

crit pts: 0, -1, 5 PIPS: −0.52, 3.19

Checkpoint to make sure your entered your function in your calculator correctly:

When x = 6, y = 64





(−1, 10.92) MAX

(0, 10) MIN + y-int

(5, 82.92) MAX

(−0.52, 10.47)

(3.19, 52.83)