

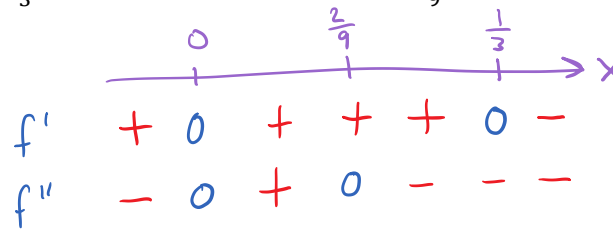
1.

a) $(-\infty, \infty)$

b) x -intercepts: $0, \frac{4}{9}$; y -intercept: 0

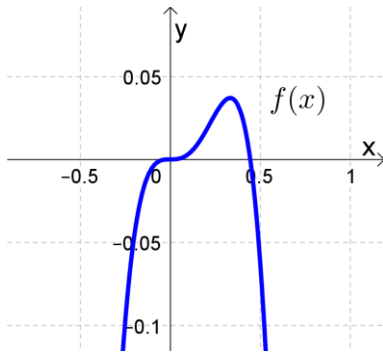
c) $f' = 0$: $0, \frac{1}{3}$; f' DNE: None; $f'' = 0$: $0, \frac{2}{9}$; f'' DNE: None

d)



e) Local max: $(\frac{1}{3}, \frac{1}{27})$; Inflection points: $(0,0)$ and $(\frac{2}{9}, \frac{16}{729})$

f)



2.

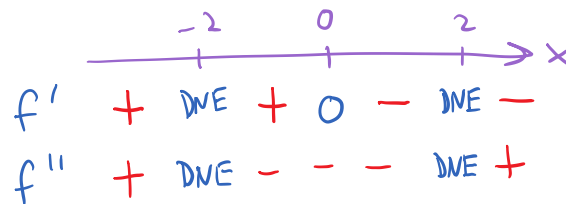
a) $(-\infty, -2) \cup (-2, 2) \cup (2, \infty)$

b) x -intercept: 0; y -intercept: 0

c) Vertical asymptotes: $x = -2$ and $x = 2$; Horizontal asymptote: $y = 1$

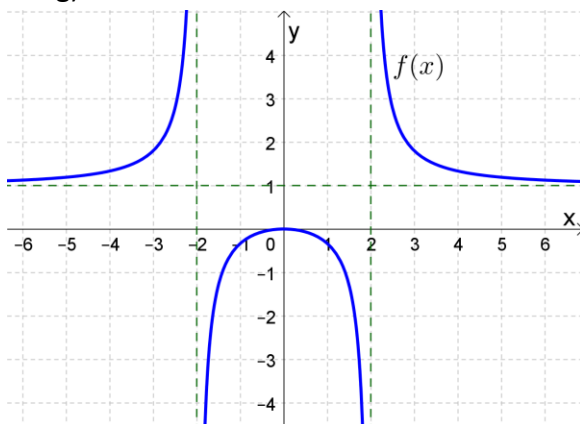
d) $f' = 0$: 0; f' DNE: $-2, 2$; $f'' = 0$: None; f'' DNE: $-2, 2$

e)



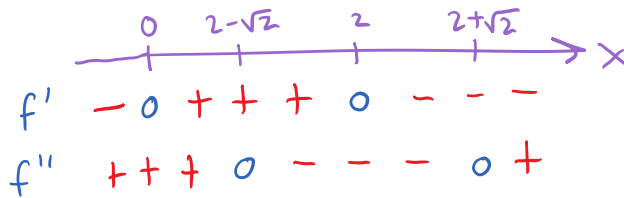
f) Local max: $(0, 0)$

g)



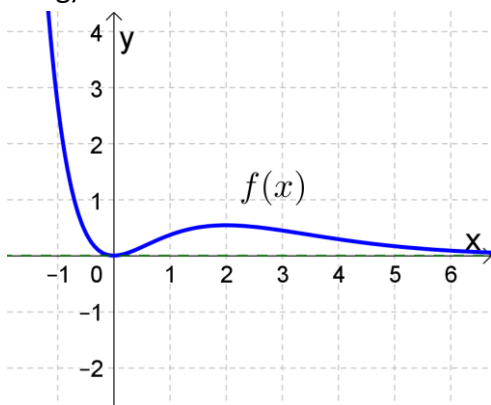
3.

- a) $(-\infty, \infty)$
- b) x-intercept: 0 ; y-intercept: 0
- c) Vertical asymptotes: none; Horizontal asymptote: $y = 0$
- d) $f' = 0$: 0, 2 ; f' DNE: None ; $f'' = 0$: $2 - \sqrt{2}$, $2 + \sqrt{2}$; f'' DNE: None
- e)



- f) Local max: $(2, \frac{4}{e^2})$; Local min: (0, 0); Inflection points: (0.59, 0.19) and (3.41, 0.38)

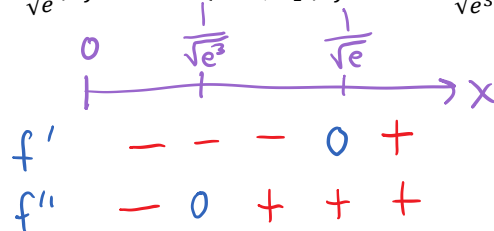
g)



4.

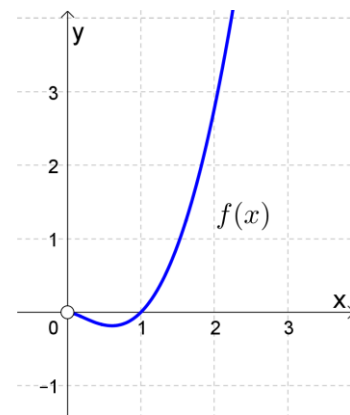
- a) $(0, \infty)$
- b) x-intercept: 1 ; y-intercept: none
- c) Vertical asymptotes: none; Horizontal asymptote: none
- d) $f' = 0$: $\frac{1}{\sqrt{e}}$; f' DNE: $(-\infty, 0]$; $f'' = 0$: $\frac{1}{\sqrt{e^3}}$; f'' DNE: $(-\infty, 0]$

e)



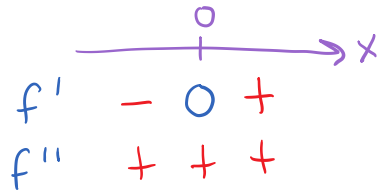
- f) Local min: $(\frac{1}{\sqrt{e}}, -\frac{1}{2e})$; Inflection point: $(\frac{1}{\sqrt{e^3}}, -\frac{3}{2e^3})$

g) See graph to right.

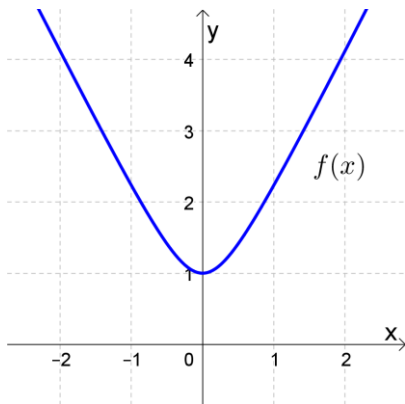


5.

- a) $(-\infty, \infty)$
- b) x -intercept: none ; y -intercept: 1
- c) $f' = 0$: 0 ; f' DNE: None ; $f'' = 0$: None; f'' DNE: None
- d)

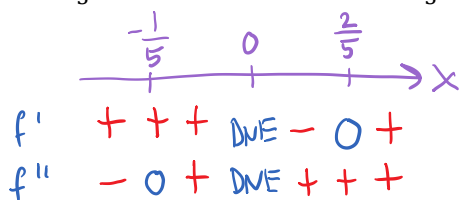


- e) Local max: none; Local min: $(0, 1)$; Inflection points: none
- f)



6.

- a) $(-\infty, \infty)$
- b) x -intercepts: 0, 1; y -intercept: 0
- c) $f' = 0$: $\frac{2}{5}$; f' DNE: 0; $f'' = 0$: $-\frac{1}{5}$; f'' DNE: 0
- d)



- e) Local max: $(0, 0)$; Local min: $(\frac{2}{5}, -0.33)$; Inflection point: $(-\frac{1}{5}, -0.41)$
- f) See graph to right.

