1.

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

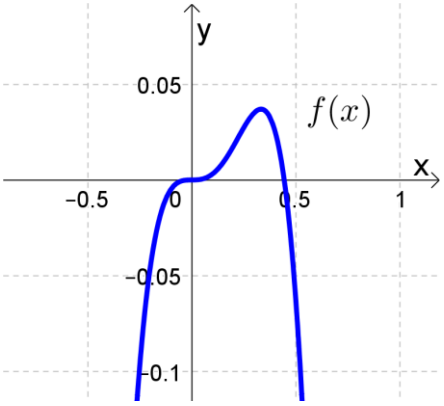
b) x-intercepts: $0, \frac{4}{9}$; y-intercept: 0

c) $f' = 0$: $0, \frac{1}{3}$; f' DNE: Nowhere ; $f'' = 0$: $0, \frac{2}{9}$; f'' DNE: Nowhere

d) TODO

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

f)



2.

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

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

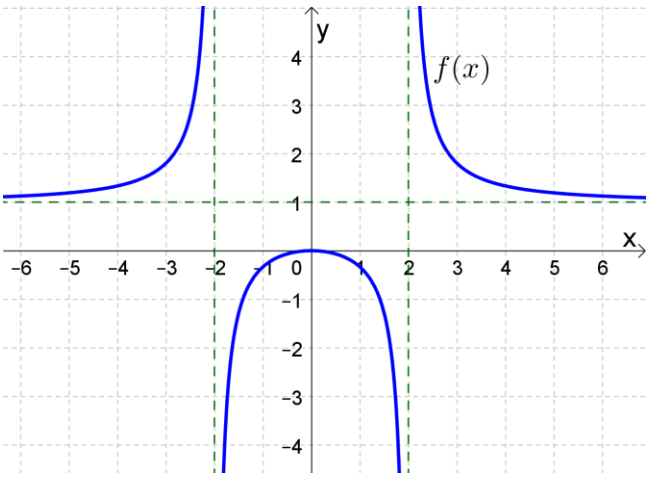
c) Vertical asymptotes: $x = -2$ and $x = 2$; Horizontal asymptote: $y = 1$

d) $f' = 0$: 0 ; f' DNE: $-2, 2$; $f'' = 0$: Nowhere; f'' DNE: $-2, 2$

e) TODO

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

g)



3.

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

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

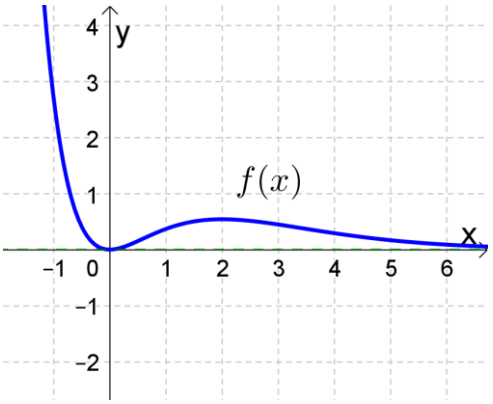
c) Vertical asymptotes: none; Horizontal asymptote: $y = 0$

d) $f' = 0$: $0,2$; f' DNE: Nowhere ; $f'' = 0$: $2 - \sqrt{3},\ 2 + \sqrt{3}$; f'' DNE: Nowhere

e) TODO

f) Local max: $\left(2, \frac{4}{e^2}\right)$; Local min: $(0, 0)$; Inflection points: $(0.27, 0.055)$ and $(3.73, 0.33)$

g)



4.

a) $(0, \infty)$

b) x-intercept: 1 ; y-intercept: none

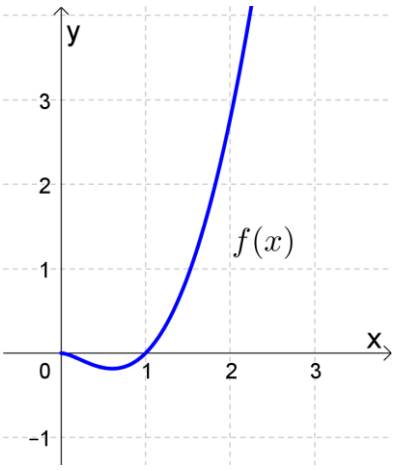
c) Vertical asymptotes: none; Horizontal asymptote: none

d) $f' = 0$: $\frac{1}{\sqrt{e}}$; f' DNE: Nowhere ; $f'' = 0$: Nowhere; f'' DNE: Nowhere (Note: $x = 0$ is at the edge of the domain of the function, so we don't have to worry about it as a possible x-value for a change in concavity)

e) TODO

f) Local min: $\left(\frac{1}{\sqrt{e}}, -\frac{1}{2e}\right)$

g)



5.

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

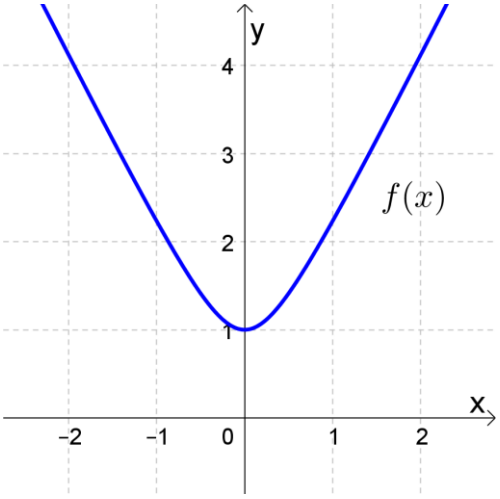
b) x-intercept: none ; y-intercept: 1

c) $f' = 0$: 0 ; f' DNE: Nowhere ; $f'' = 0$: Nowhere; f'' DNE: Nowhere

d) TODO

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: $x = 0$; $f'' = 0$: $-\frac{1}{5}$; f'' DNE: 0

d) TODO

e) Local max: $(0, 0)$; Local min: $\left(\frac{2}{5}, -0.33\right)$; Inflection point: $\left(-\frac{1}{5}, 0.21\right)$

f)