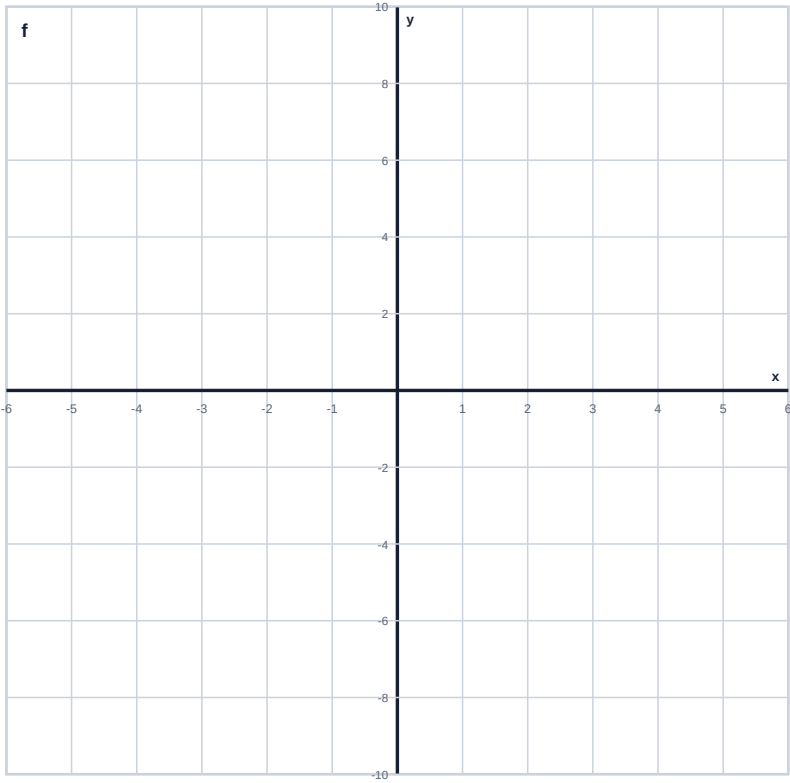


Horizontal Tangents on Graphs

Find every horizontal tangent point in the displayed interval.

1. $f(x) = -x - 4/x$

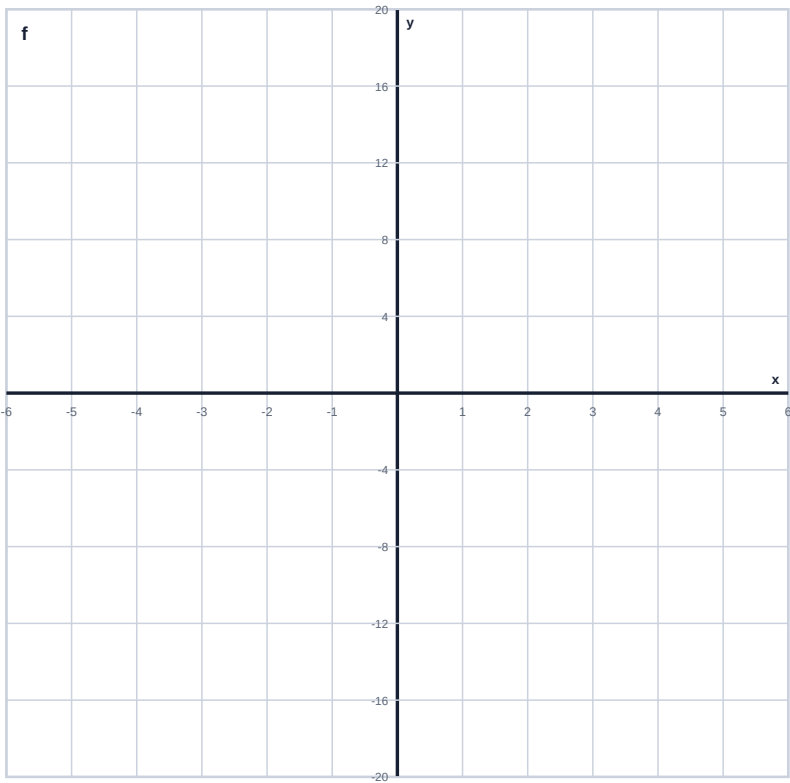
All real x except $x = 0$



Plot the equation first, then identify every horizontal tangent.

2. $f(x) = 2(x + 1)^2 - 18$

All real x .



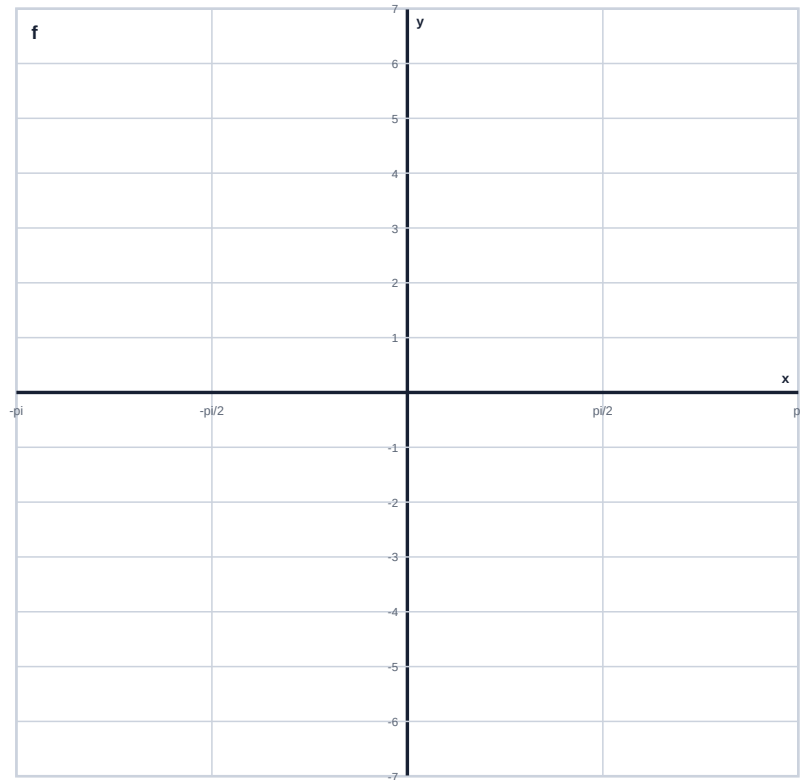
Plot the equation first, then identify every horizontal tangent.

Horizontal Tangents on Graphs

Find every horizontal tangent point in the displayed interval.

3. $f(x) = 3\sin(x) + 2$

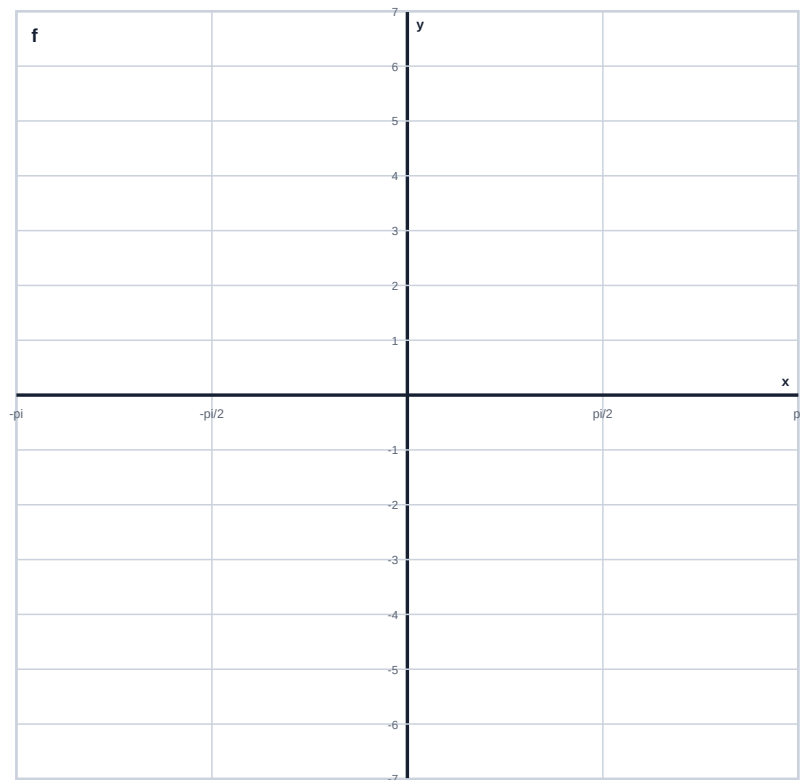
Displayed interval $[-\pi, \pi]$.



Plot the equation first, then identify every horizontal tangent.

4. $f(x) = -2\cos(2(x)) - 1$

Displayed interval $[-\pi, \pi]$.



Plot the equation first, then identify every horizontal tangent.

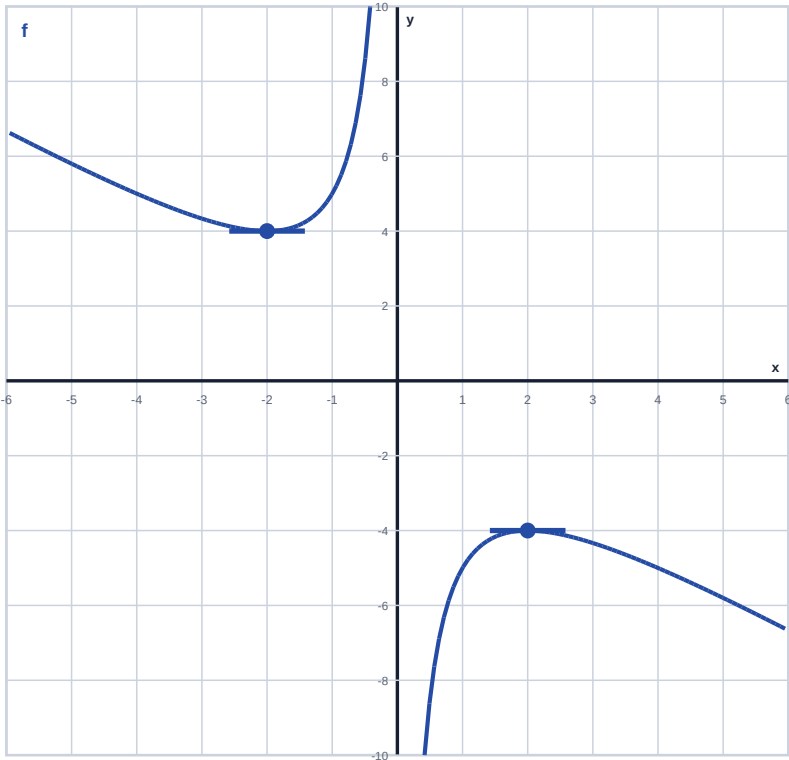
Horizontal Tangents on Graphs

Worked Answer Key

Find every horizontal tangent point in the displayed interval.

1. $f(x) = -x - 4/x$

All real x except $x = 0$

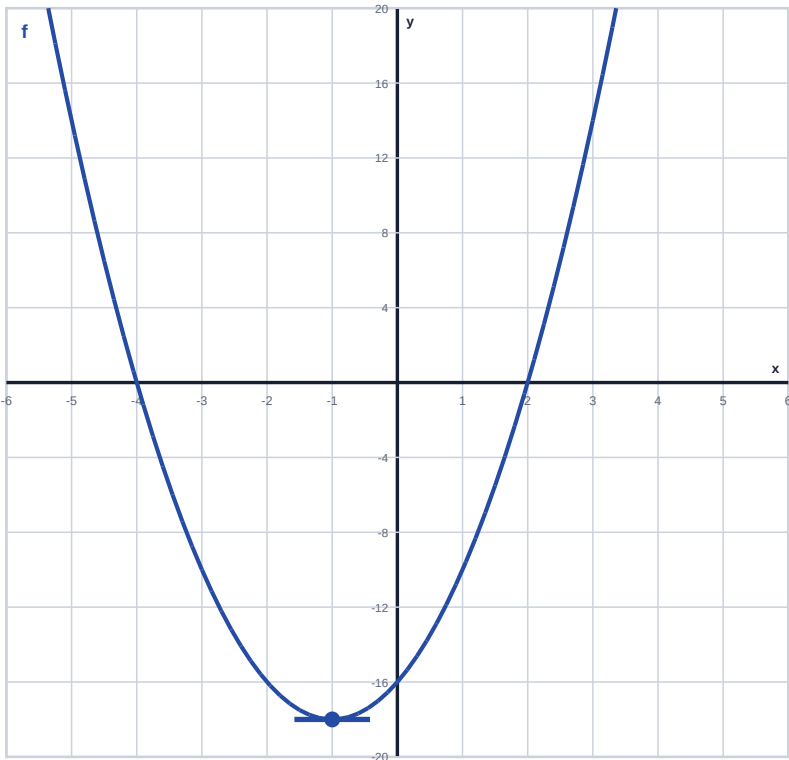


$f'(x) = -1 + 4/x^2.$

Horizontal tangent points in the displayed interval: $(-2, 4), (2, -4).$

2. $f(x) = 2(x + 1)^2 - 18$

All real x .



$f'(x) = 4(x + 1).$

Horizontal tangent points in the displayed interval: $(-1, -18).$

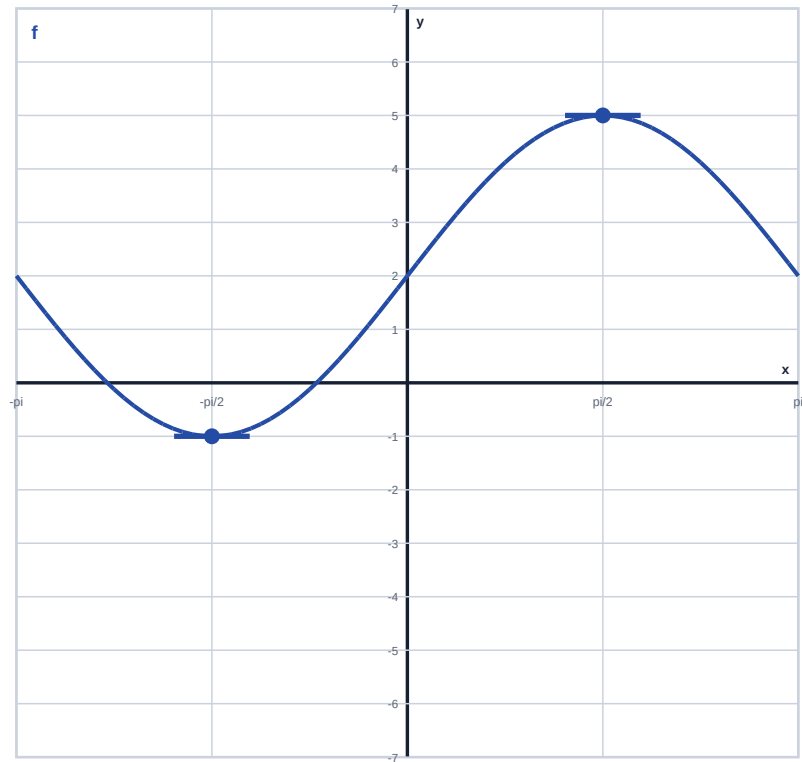
Horizontal Tangents on Graphs

Worked Answer Key

Find every horizontal tangent point in the displayed interval.

3. $f(x) = 3\sin(x) + 2$

Displayed interval $[-\pi, \pi]$.

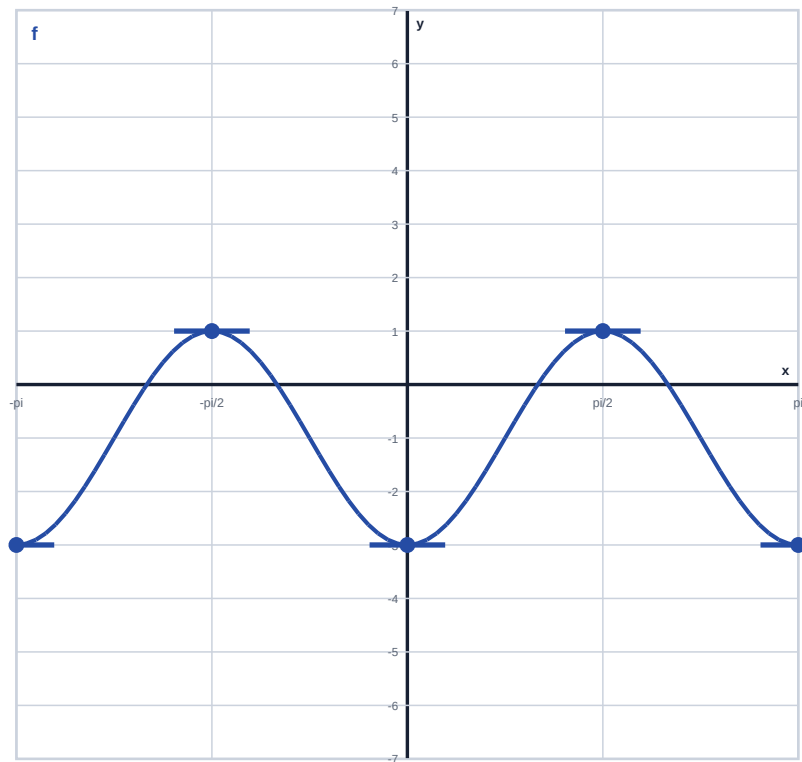


$f'(x) = 3\cos(x).$

Horizontal tangent points in the displayed interval:
 $(-\pi/2, -1), (\pi/2, 5).$

4. $f(x) = -2\cos(2(x)) - 1$

Displayed interval $[-\pi, \pi]$.



$f'(x) = 4\sin(2(x)).$

Horizontal tangent points in the displayed interval: $(-\pi, -3), (-\pi/2, 1), (0, -3), (\pi/2, 1), (\pi, -3).$