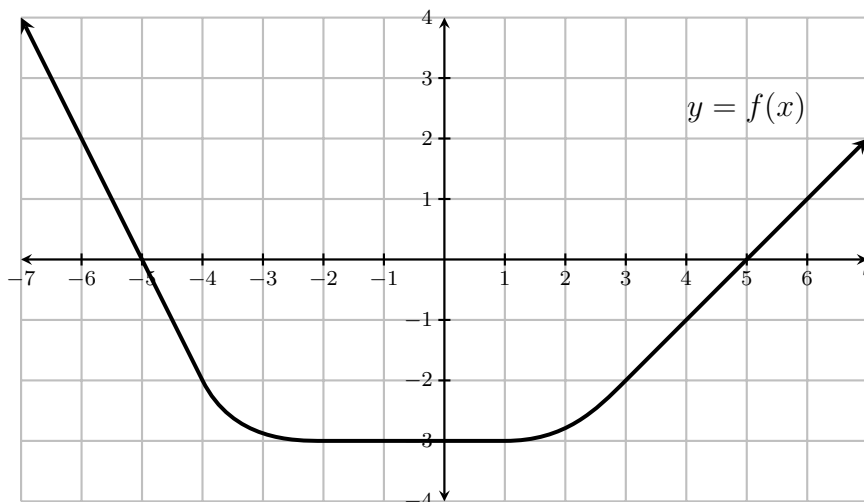


Name: \_\_\_\_\_

1. (4 pts.) Find the derivatives of the following functions:

(a)  $f(x) = \frac{x^2}{\sqrt{3}}$

(b)  $f(x) = 3x^4 - 2e^x$

2. (8 pts.) Find all  $x$  for which the tangent to the graph of  $f(x) = \frac{1}{4x^2} - x$  at  $(x, f(x))$  is horizontal.3. (8 pts.) The graph of a function  $f(x)$  is shown below.Using the same coordinate axis, sketch the graph of its derivative  $f'(x)$ 

Name: \_\_\_\_\_

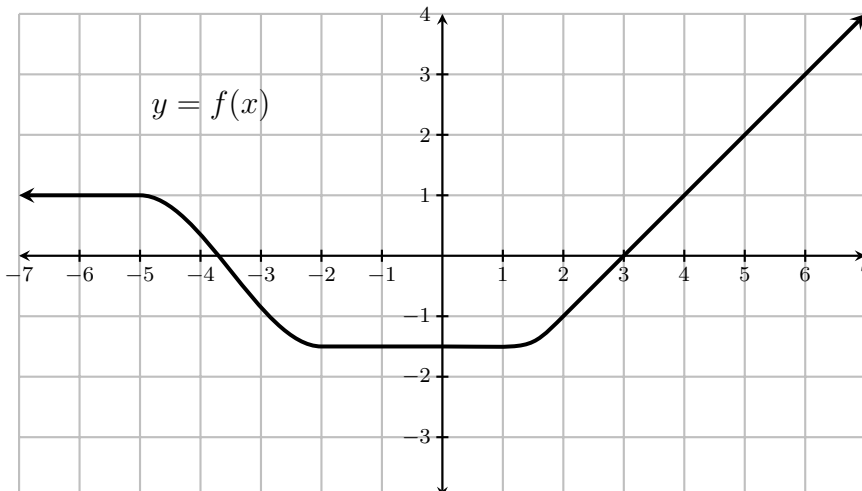
1. (4 pts.) Find the derivatives of the following functions:

(a)  $f(x) = 5e^x + 5x^3$

(b)  $f(x) = \frac{x}{1 + \sqrt{2}}$

2. (8 pts.) Find all  $x$  for which the tangent to the graph of  $f(x) = x^4 - 8x^2$  at  $(x, f(x))$  is horizontal.

3. (8 pts.) The graph of a function  $f(x)$  is shown below.  
Using the same coordinate axis, sketch the graph of its derivative  $f'(x)$ .



Name: \_\_\_\_\_

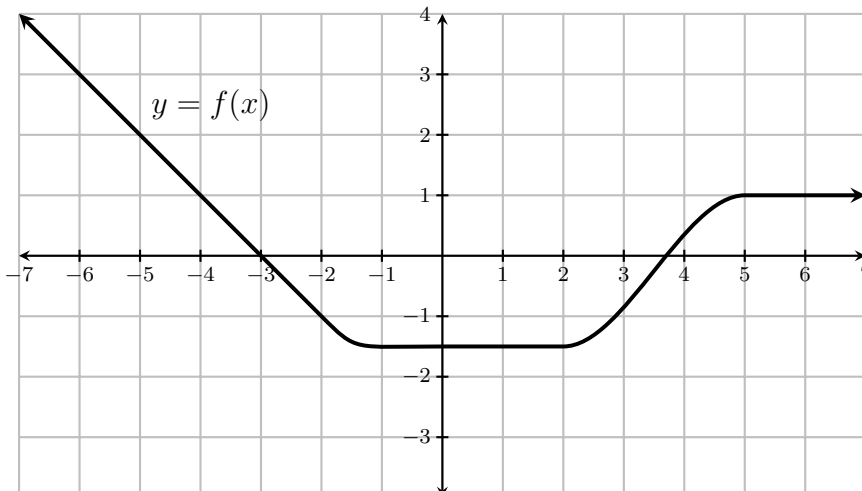
1. (4 pts.) Find the derivatives of the following functions:

(a)  $f(x) = 3e^x + 4x^3$

(b)  $f(x) = \frac{x}{1+e}$

2. (8 pts.) Find all  $x$  for which the tangent to the graph of  $f(x) = 3x - e^x$  at  $(x, f(x))$  is horizontal.

3. (8 pts.) The graph of a function  $f(x)$  is shown below.  
Using the same coordinate axis, sketch the graph of its derivative  $f'(x)$ .



Name: \_\_\_\_\_

1. (4 pts.) Find the derivatives of the following functions:

(a)  $f(x) = \frac{e^3}{x}$

(b)  $f(x) = 3x^4 - 2e^x$

2. (8 pts.) Find all  $x$  for which the tangent to the graph of  $f(x) = \frac{9}{x} + x$  at  $(x, f(x))$  is horizontal.3. (8 pts.) The graph of a function  $f(x)$  is shown below.Using the same coordinate axis, sketch the graph of its derivative  $f'(x)$ 