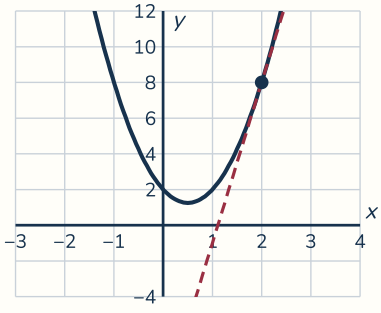
Using derivatives — Tangent lines

Name: _____ Date: _____

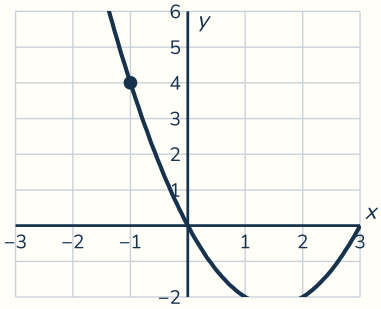
Find the equation of the tangent line at the point given.

1. **$f(x) = 3x^2 - 3x + 2,\ x = 2$**

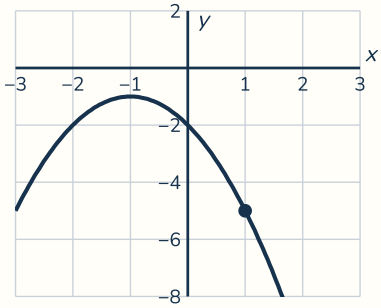
   $f'(x) = 6x - 3$
   $m = f'(2) = 9,\ f(2) = 8$
   $y - 8 = 9(x - 2)$
   $y = 9x - 10$



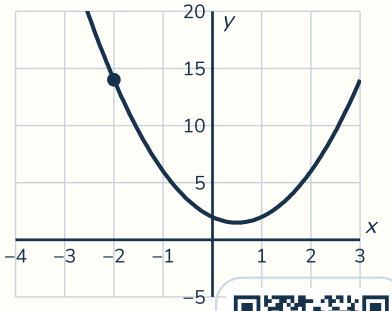
2. **$f(x) = x^2 - 3x,\ x = -1$**



3. **$f(x) = -x^2 - 2x - 2,\ x = 1$**



4. **$f(x) = 2x^2 - 2x + 2,\ x = -2$**



Using derivatives · Tangent lines — Answer key

1. $f(x) = 3x^2 - 3x + 2$; tangent at $x = 2 \rightarrow y = 9x - 10$

2. $f(x) = x^2 - 3x$; tangent at $x = -1 \rightarrow y = -5x - 1$

3. $f(x) = -x^2 - 2x - 2$; tangent at $x = 1 \rightarrow y = -4x - 1$

4. $f(x) = 2x^2 - 2x + 2$; tangent at $x = -2 \rightarrow y = -10x - 6$