1. **1 / 1 point**

Gradient descent is an algorithm for finding values of parameters w and b that minimize the cost function J.

repeat until convergence {

$$w = w - \alpha \frac{\partial}{\partial w} J(w, b)$$

$$b = b - \alpha \frac{\partial}{\partial b} J(w, b)$$

When $\frac{\partial J(w,b)}{\partial w}$ is a negative number (less than zero), what happens to w after one update step?

◯ It is not possible to tell if w will increase or decrease.

◯ w stays the same

◉ w increases.

◯ w decreases

✓ **Correct**
  The learning rate is always a positive number, so if you take W minus a negative number, you end up with a new value for W that is larger (more positive).

2. **1 / 1 point**

For linear regression, what is the update step for parameter b?

◉ $b = b - \alpha \frac{1}{m} \sum_{i=1}^{m} (f_{w,b}(x^{(i)}) - y^{(i)})$

◯ $b = b - \alpha \frac{1}{m} \sum_{i=1}^{m} (f_{w,b}(x^{(i)}) - y^{(i)})x^{(i)}$

✓ **Correct**
  The update step is $b = b - \alpha \frac{\partial J(w,b)}{\partial w}$ where $\frac{\partial J(w,b)}{\partial b}$ can be computed with this expression:
  $$\sum_{i=1}^{m} (f_{w,b}(x^{(i)}) - y^{(i)})$$