Name ___Solutions_____ Discrete I, Quiz 7

1) Disprove the claim that the sum of any two odd numbers is odd.

We must find two odd numbers whose sum is not odd. Let us consider 3 and 5:

$$3 + 5 = 8$$

2) Justify the claim that "For all rational numbers x and y, xy is rational."

If x and y are rational numbers, then we can write them as fractions of integers:

$$x = \frac{a}{b}$$

$$y = \frac{c}{d}$$

Then the product is also a faction of integers:

$$xy = \frac{a}{b} \cdot \frac{c}{d} = \frac{ac}{bd}$$