Practice worksheet | Proof and circle geometry

Counterexamples

Name: _____ Date: _____

6 questions | 13 marks

1. Disprove: every even integer is divisible by 4. [2 marks]

2. Disprove: for every real x, $\sqrt{x^2} = x$. [2 marks]

3. Disprove: the sum of any two irrational numbers is irrational. [2 marks]

4. Disprove: if $ab = 0$, then both a and b are zero. [2 marks]

5. A claim concerns positive integers. Why does $n = 0$ not disprove it? [2 marks]

6. For integer n, the first four values of $n^2 - n + 5$ are prime. Find a positive-integer counterexample. [3 marks]