Practice worksheet | Geometry and proof

Angle and similarity reasoning

Name: _____ Date: _____

6 questions | 13 marks

1. Two parallel lines are cut by a transversal. An alternate angle is 72°. Find its matching alternate angle and state the reason. [2 marks]

2. A triangle has angles 36° and 91°. Find the third. [2 marks]

3. Triangles have angle sets $50^\circ, 60^\circ, 70^\circ$ and $70^\circ, 50^\circ, 60^\circ$. Are they similar? Explain. [2 marks]

4. Similar triangles ABC and DEF have $A \leftrightarrow D, B \leftrightarrow E, C \leftrightarrow F$. $AB = 8, DE = 12, BC = 10$. Find EF. [2 marks]

5. A transversal makes equal corresponding angles with two lines. What can be concluded about the lines? [2 marks]

6. A student says two triangles are similar because both contain a 40° angle. Give a counterexample using angle sets. [3 marks]