

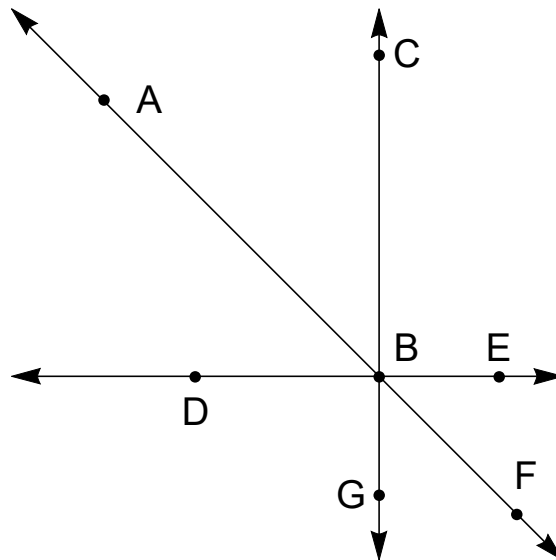
Math 1303 - Math in the Liberal Arts

Chapter 8 Exam (Exam 4)

Name: _____

0. Easy problem, please go here: <https://forms.gle/8CQaL31kSMZxPFeu5> and fill out the survey, answer honestly, and add your thoughts where appropriate!

1. Use the figure to determine the following.



(a) $\overleftrightarrow{AB} \cup \overleftrightarrow{BF}$

(b) $\angle DBG \cup \angle GBF$

(c) $\overleftrightarrow{BE} \cup \overleftrightarrow{BC}$

(d) $\angle FBE \cap \angle ABC$

(e) $\overleftrightarrow{DE} \cup \overleftrightarrow{AB}$

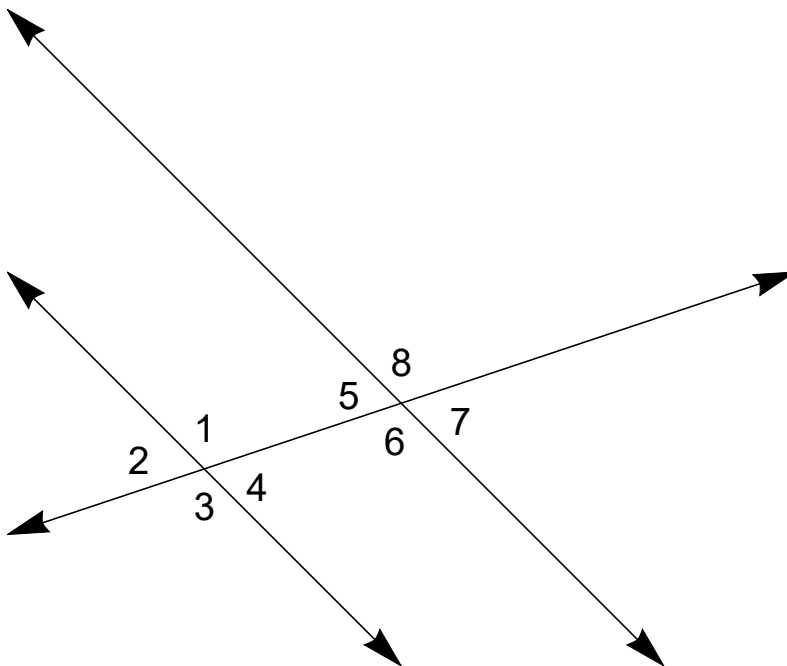
(f) $\angle ABD \cup \angle DBG$

(g) $\overleftrightarrow{BD} \cup \overleftrightarrow{BF}$

(h) $\overleftrightarrow{BC} \cap \overleftrightarrow{AF}$

(i) $\overleftrightarrow{DE} \cap \angle ABE$

2. Parallel lines are cut by the transversal shown. Use the figure to answer the following.



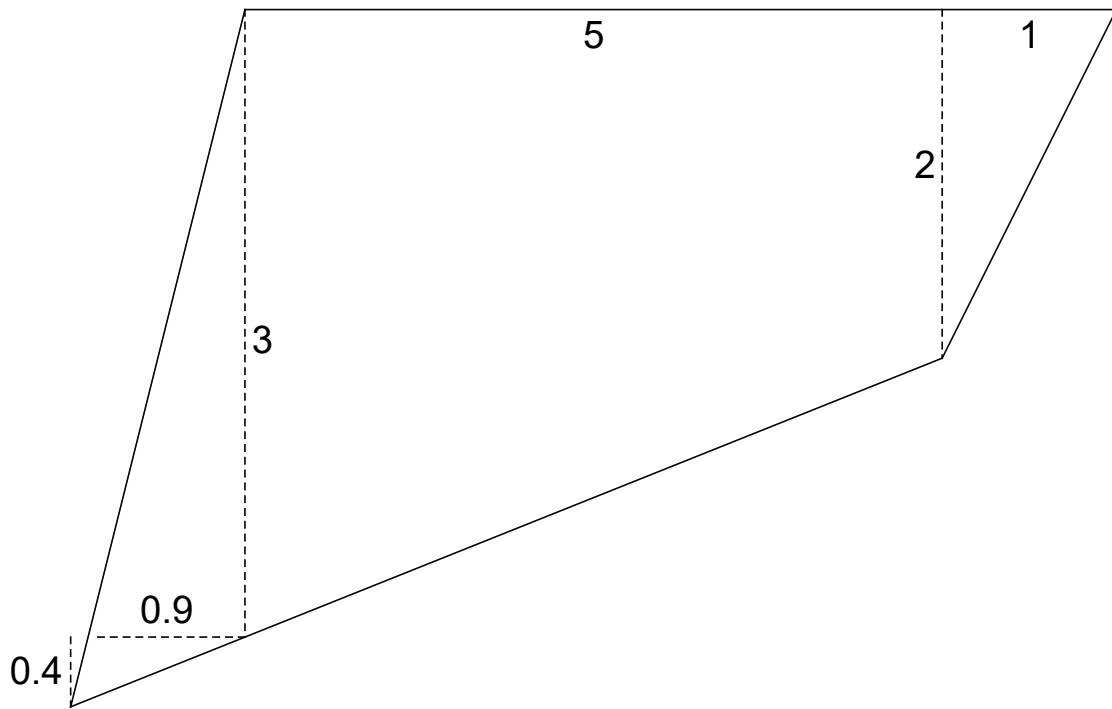
(a) If $\angle 8 = 94^\circ$, compute the measure of angles $\angle 1$ through $\angle 7$.

(b) Determine all labeled angles complementary to $\angle 3$.

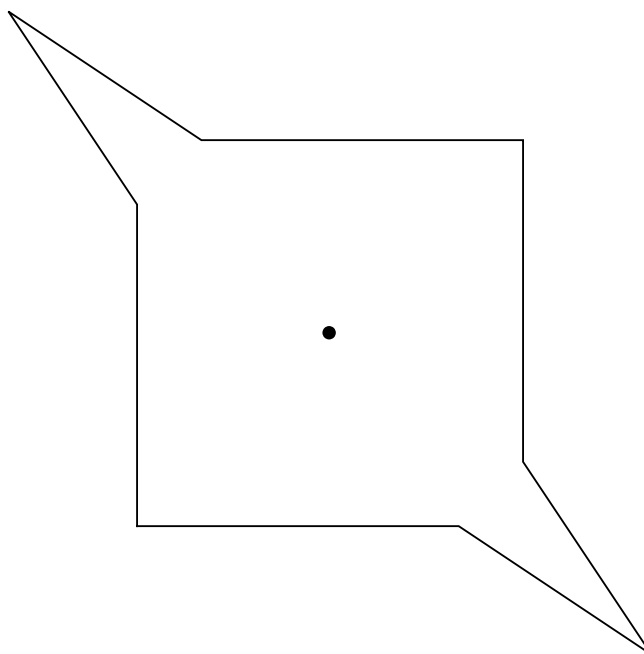
(c) Determine all labeled angles supplementary to $\angle 5$.

(d) Label each of the angles $\angle 1$ through $\angle 8$ as acute, obtuse, right, or straight line angles.

3. The following graph depicts a quadrilateral (solid lines), along with measurements of certain dimensions. Use this information to compute the area of the quadrilateral. *Note that the dashed horizontal line of length 0.9 does not intersect the dashed vertical line of length 0.4 near the bottom left of the figure.*



4. For this problem, consider the following polygon, with black dot representing its geometric center.



(a) Find all the lines passing through the center of the polygon such that reflecting the geometric figure across the line results in reflexive symmetry.

(b) Find all possible angles of rotation between 0° and 360° for which the geometric figure rotated about the center results in a rotational symmetry.

5. A regular polygon has 8 vertices and 17 edges. How many faces does it have?

6. A sphere of diameter 4 inches is placed in a box whose side lengths are all 4 inches. How much free volume is left in the box outside of the sphere?

7. You walk outside, all 5'6" of yourself, and cast a shadow 4 feet long. The person you are walking with casts a shadow 3' 8" long. How tall is the other person?