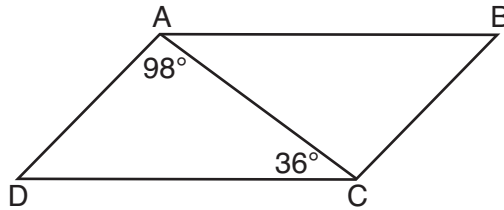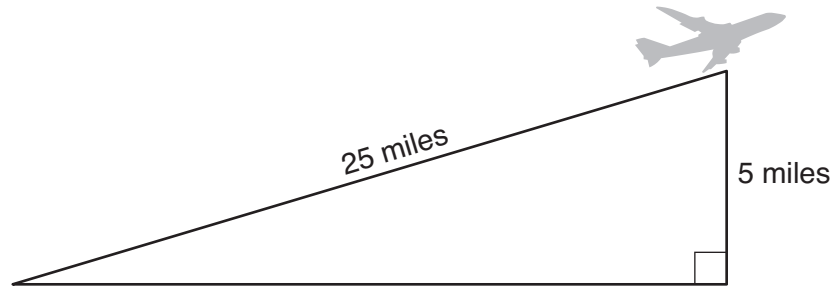## Part II

Answer all 7 questions in this part. Each correct answer will receive 2 credits. Clearly indicate the necessary steps, including appropriate formula substitutions, diagrams, graphs, charts, etc. Utilize the information provided for each question to determine your answer. Note that diagrams are not necessarily drawn to scale. For all questions in this part, a correct numerical answer with no work shown will receive only 1 credit. All answers should be written in pen, except for graphs and drawings, which should be done in pencil. [14]

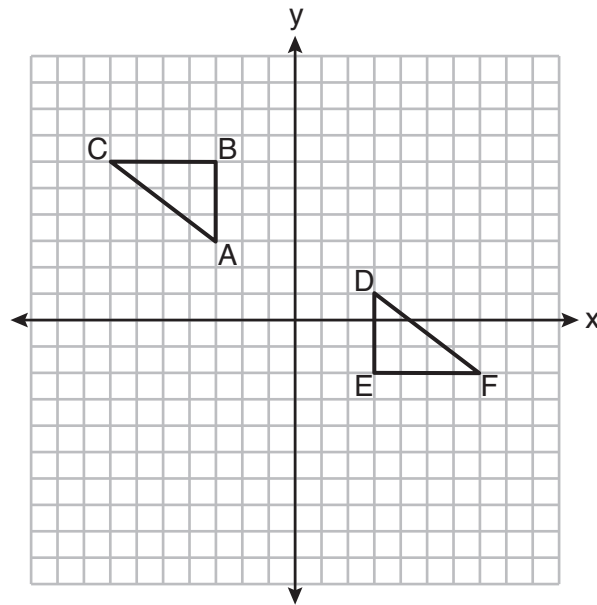25 In parallelogram *ABCD* shown below, m∠*DAC* = 98° and m∠*ACD* = 36°.

What is the measure of angle *B*? Explain why.

26 An airplane took off at a constant angle of elevation. After the plane traveled for 25 miles, it reached an altitude of 5 miles, as modeled below.
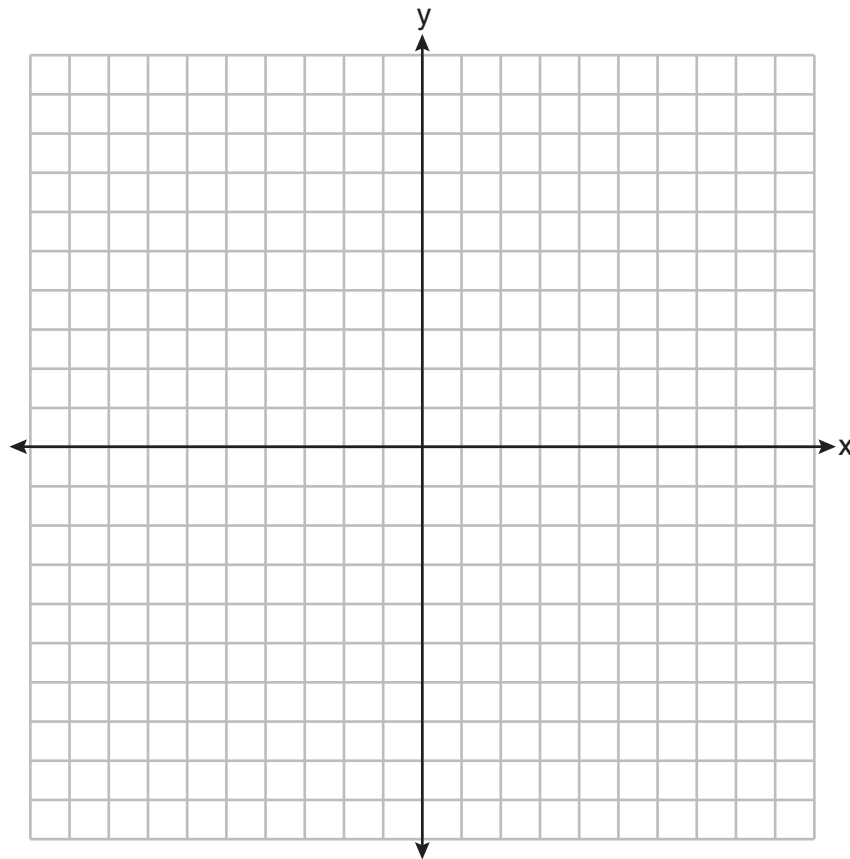

To the *nearest tenth of a degree*, what was the angle of elevation?

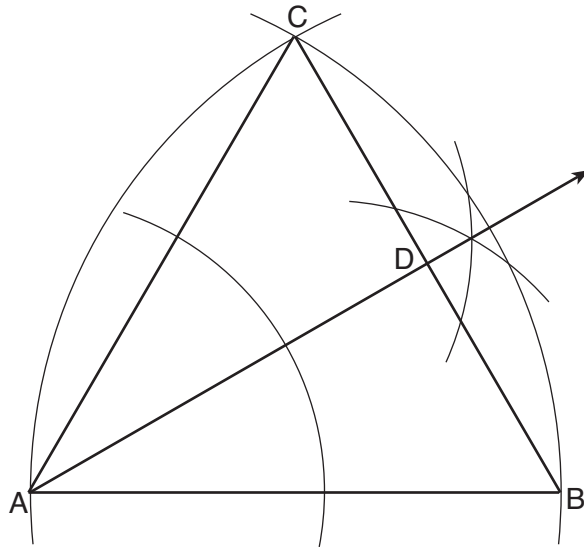**27** On the set of axes below, $\triangle ABC \cong \triangle DEF$.

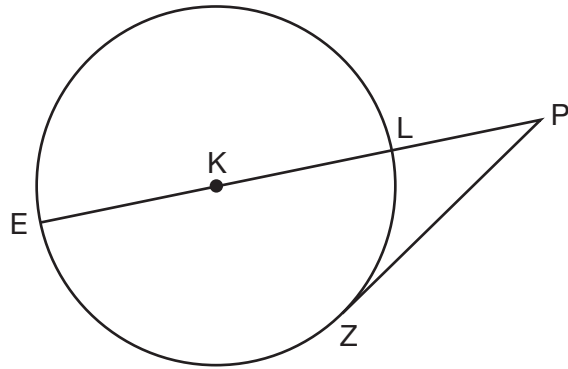Describe a sequence of rigid motions that maps $\triangle ABC$ onto $\triangle DEF$.

28 The vertices of $\triangle ABC$ have coordinates $A(-2,-1)$, $B(10,-1)$, and $C(4,4)$. Determine and state the area of $\triangle ABC$. [The use of the set of axes below is optional.]

y

x

29 Using the construction below, state the degree measure of ∠*CAD*. Explain why.

30 In the diagram below of circle K, secant $\overline{PLKE}$ and tangent $\overline{PZ}$ are drawn from external point P.

If $m\widehat{LZ} = 56°$, determine and state the degree measure of angle P.