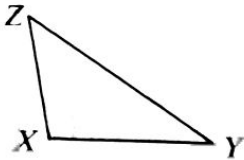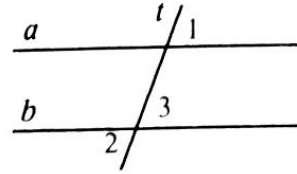# Written Exercises

Write indirect proofs in paragraph form.

A 1. Given: $\triangle XYZ$; $m\angle X = 100$
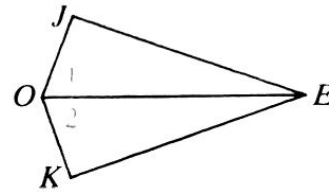Prove: $\angle Y$ is an acute $\angle$.

2. Given: Transversal t cuts lines a and b;
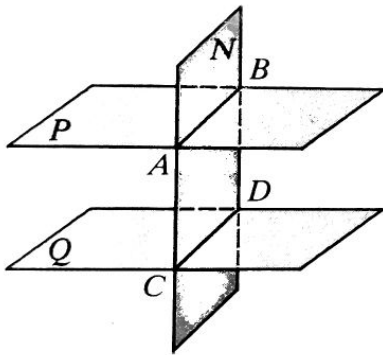$m\angle 1 \neq m\angle 2$
Prove: $a \not\parallel b$

3. Given: $\overline{OJ} \cong \overline{OK}$; $\overline{JE} \not\cong \overline{KE}$
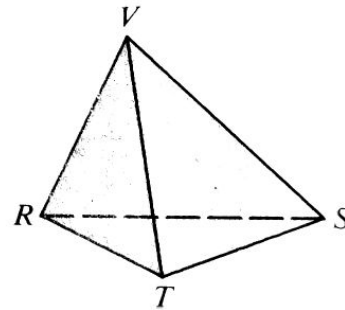Prove: $\overrightarrow{OE}$ doesn't bisect $\angle JOK$.

4. Given: $\angle 1 \cong \angle 2$; $\overline{OJ} \not\cong \overline{OK}$
Prove: $\angle J$ and $\angle K$ are not both right angles.

B 5. Given: $\overline{AB} \not\parallel \overline{CD}$
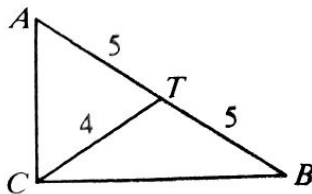Prove: Planes P and Q intersect.

6. Given: $\triangle RVT$ and SVT are equilateral;
$\triangle RVS$ is not equilateral.
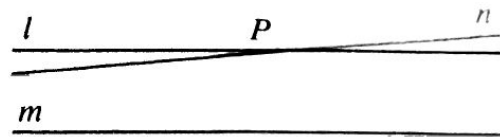Prove: $\triangle RST$ is not equilateral.

7. Given: Points E, F, G, H; segments $\overline{EF}$, $\overline{FG}$, $\overline{GH}$, $\overline{HE}$;
$m\angle EFG = 93$; $m\angle FGH = 70$; $m\angle GHE = 127$; $m\angle HEF = 60$
Prove: E, F, G, and H are not coplanar.

8. Given: $AT = BT = 5$; $CT = 4$
Prove: $\angle ACB$ is not a rt. $\angle$.

9. Given: Coplanar lines l, m, n;
n intersects l in P; $l \parallel m$
Prove: n intersects m.

10. Prove that there is no smallest positive number.

11. Prove that a collection of quarters and dimes worth 95¢ must have an odd number of quarters.

12. Prove that no regular polygon has a 155° angle.