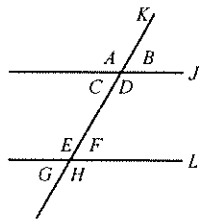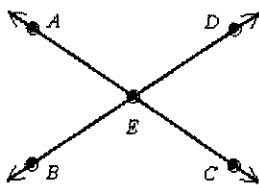# Geometry Sem 1 Final Exam Review   Name: _____

1. **Given:** $\angle H$ and $\angle C$ are supplementary.
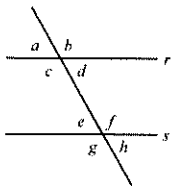   **Prove:** $J \parallel L$

2. In the figure shown, $m\angle AED = 132°?$ Find $m\angle BEC$.
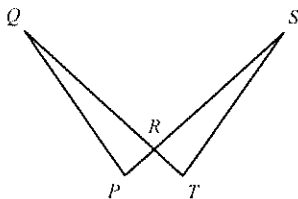
3. **Given:** $r \parallel s$
   Prove: $\angle b$ and $\angle h$ are supplementary.

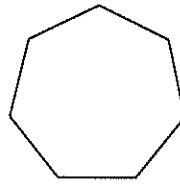4. Based on the given information, what can you conclude, and why?
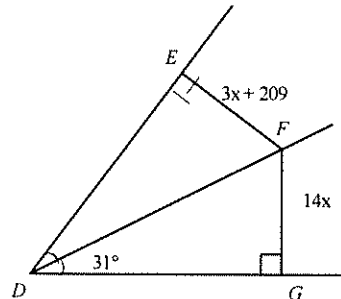   **Given:** $\angle P \cong \angle T$, $\overline{PR} \cong \overline{RT}$

5. Which statement is an example of the Addition Property of Equality?
   a. If $p = q$ then $p + s = q + s$.
   b. both
   c. neither
   d. If $p = q$ then $p - s = q - s$

6. Find the sum of the measures of the angles of the regular polygon. Find the measure of one interior angle and one exterior angle.
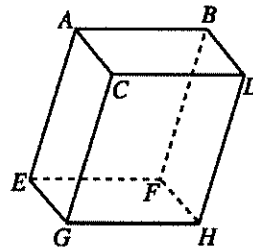
7. $\overline{DF}$ bisects $\angle EDG$. Find the value of x.

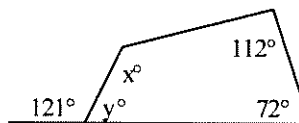8. Identify the hypothesis and conclusion of this conditional statement:
   If two lines intersect at right angles, then the two lines are perpendicular.

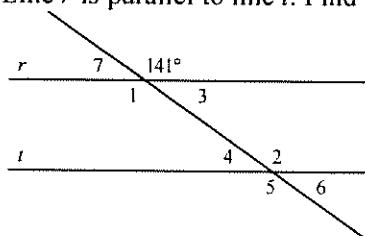9. Name the three labeled segments that are parallel to $\overline{DH}$.

10. Find the center of the circle that you can circumscribe about the triangle: (-2, 1), (-2, -4), (1, -4)
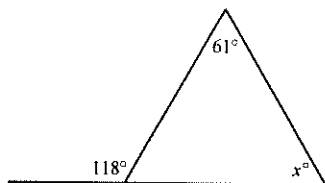
11. Find the missing angle measures.

12. $\angle DFG$ $\angle DFG$ and $\angle JKL$ are complementary angles. $m\angle DFG = x + 6$, and $m\angle JKL = x - 2$. Find the measure of each angle.

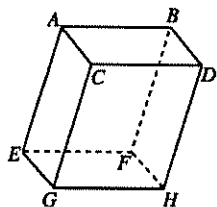13. Line *r* is parallel to line *t*. Find $m\angle 5$.
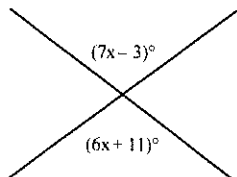

14. Find the value of *x*.

15. Find the coordinates of the midpoint of the segment whose endpoints are $H(6, 11)$ and $K(2, 1)$.

16. Which plane is parallel to plane *EFHG*?

17. The complement of an angle is 59°. What is the measure of the angle?

18. Find the value of *x*.

Drawing not to scale

19. The vertices of a triangle are $P(-4, -3)$, $Q(8, 2)$, and $R(-5, 8)$. Name the vertices of the image reflected in the *x*-axis.

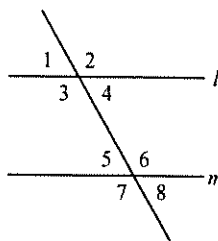20. Name the Property of Congruence that justifies the statement:
If $\angle W \cong \angle X$ and $\angle X \cong \angle Y$, then $\angle W \cong \angle Y$.

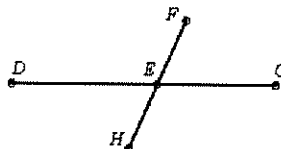21. What is the converse of the following conditional?
If a point is in the first quadrant, then its coordinates are positive.

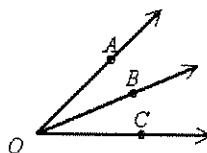22. Write the rule to describe the translation that moves 7 units to the left and 4 units up.

23. Find the value of the variable if $m \parallel l$, $m\angle 1 = 8x + 27$ and $m\angle 5 = 2x + 45$.

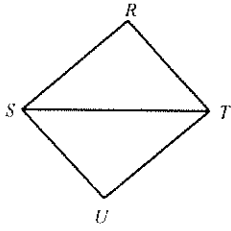24. If $m\angle DEF = 127,°$ then what are $m\angle FEG$ and $m\angle HEG$?

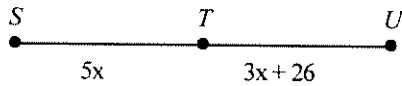25. If $m\angle BOC = 34°$ and $m\angle AOC = 60,°$ then what is the measure of $\angle AOB$?

26. Given: $\overline{RS} \cong \overline{UT}$ and $\overline{RT} \cong \overline{US}$
Prove: $\triangle RST \cong \triangle UTS$

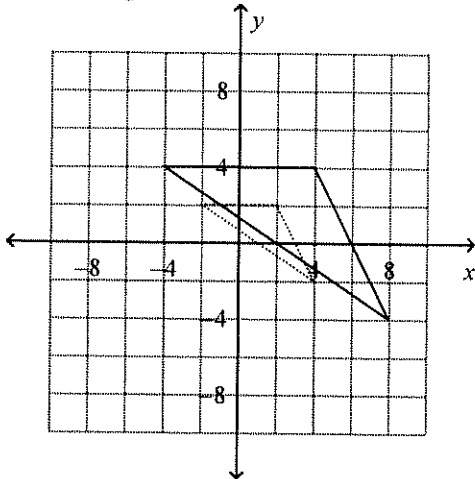27. If T is the midpoint of $\overline{SU}$, find the values of x and ST.

$5x$ $3x + 26$

28. Given $\triangle QRS \cong \triangle TUV$, $QS = 4v + 3$, and $TV = 8v - 9$, find the length of QS and TV.
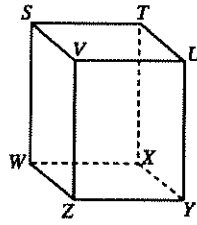
29. Name the Property of Equality that justifies the statement:
If $m = n$, then $n = m$.

30. The dashed triangle is a dilation image of the solid triangle. What is the scale factor?
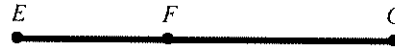

31. $\angle 1$ and $\angle 2$ are supplementary angles. $m\angle 1 = x - 39$, and $m\angle 2 = x + 81$. Find the measure of each angle.

32. What is the intersection of plane $WXYZ$ and plane $VUYZ$?
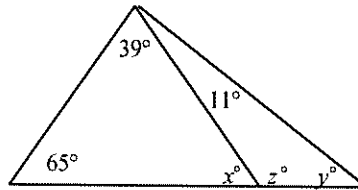

33. If $EF = 2x - 10$, $FG = 4x - 15$, and $EG = 29$, find the values of x, EF, and FG.
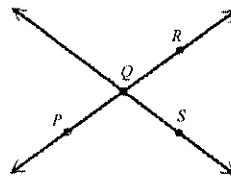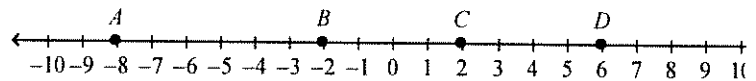

34. Name the ray in the figure.

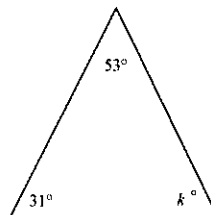35. Find the values of x, y, and z.

36. Are R, Q, and P collinear? If so, name the line on which they lie.
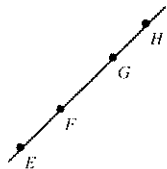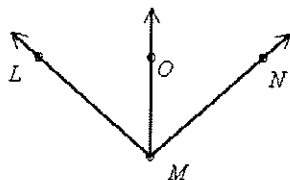

37. Find the length of AC.

38. Find the value of k.

39. Name the ray that is opposite $\overrightarrow{GH}$.

40. $\overrightarrow{MO}$ bisects $\angle LMN$, $m\angle LMO = 8x - 30$, and $m\angle NMO = 2x + 30$. Solve for x and find $m\angle LMN$.

41. If $BCDE$ is congruent to $OPQR$, then $\overline{BC}$ is congruent to ___?___.

42. Classify $\triangle ABC$ by its angles, when $m\angle A = 24°$, $m\angle B = 84°$, and $m\angle C = 72°$.

43. Find the distance between points $P(4, 6)$ and $Q(9, 2)$ to the nearest tenth.