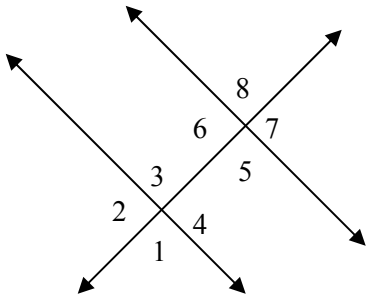
Math 0090 Lab Worksheet #4

Objective: Solve problems #1 - #10 involving geometric concepts. #11 through #15 are review problems.

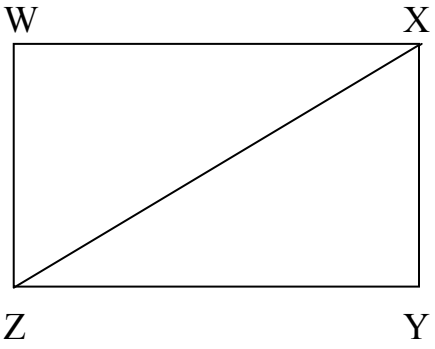
1. Use the diagram below to answer the question that follows.



If $\overline{AB}$ || $\overline{CD}$, and measure of $\angle$ 7 = 89°, find the measure of $\angle$ 1.

A. 1°
B. 89°
C. 90°
D. 91°

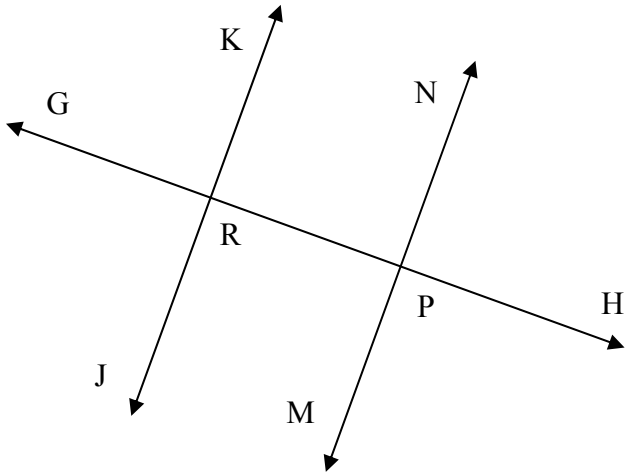
2. Use the diagram below to answer the question that follows.



WXYZ is a rectangle. Diagonal $\overline{ZX}$ divides the rectangle into two triangles. ΔWXZ and ΔYZX. Which of the following is a valid conclusion about this figure?

A. ΔWXZ is isosceles.
B. $\angle$ WZX and $\angle$ XZY are supplementary
C. $\angle WZX \cong \angle XZY$
D. $\angle$ WXZ $\cong$ $\angle$ YZX

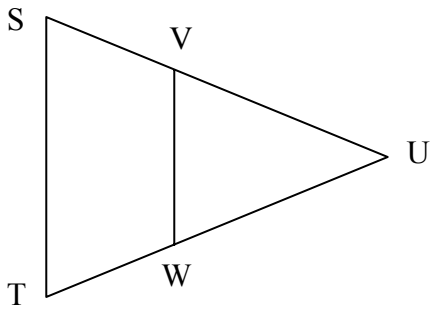
3. Use the diagram below to answer the question that follows.



Lines JK, MN and GH lie on the same plane. Line GH is perpendicular to both lines JK and MN. Which of the following is not a valid conclusion?

A ∠ GRK measures 90°
B Lines JK and MN are parallel
C ∠ JRH is greater than ∠ GPN
D ∠ HPN + ∠ KRG = 180°

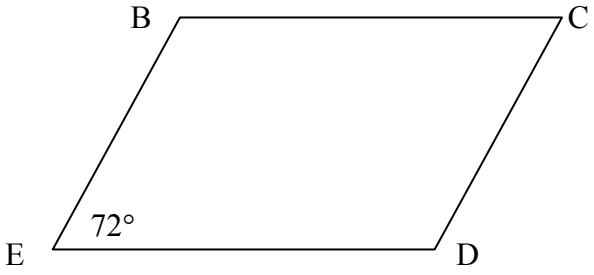
4. Use the diagram below to answer the question that follows.



Δ STU is an isosceles triangle, with $\overline{SU} = \overline{TU}$ and $\overline{ST} \,||\, \overline{VW}$. If ∠ VWT = 110°, find the measure of ∠ VUW.

A. 35°
B. 40°
C. 70°
D. 80°

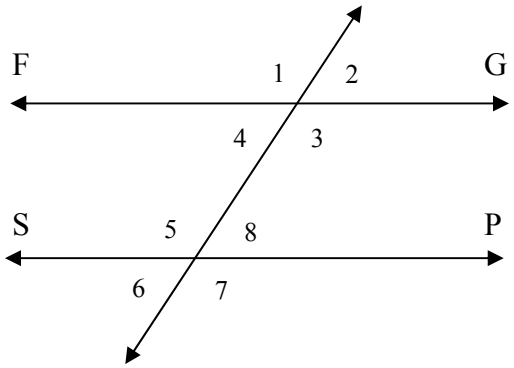
5. Use the diagram below to answer the question that follows.



In polygon BCDE, $\overline{BE} \,||\, \overline{CD}$ and $\overline{BC} \,||\, \overline{ED}$. Which one of the following is <u>not</u> a valid conclusion about this figure?

A. $\angle$ EBC $\cong \angle$ CDE
B. $\angle$ C = 72°
C. $\angle$ B $\cong$108°
D. BCDE is a rhombus

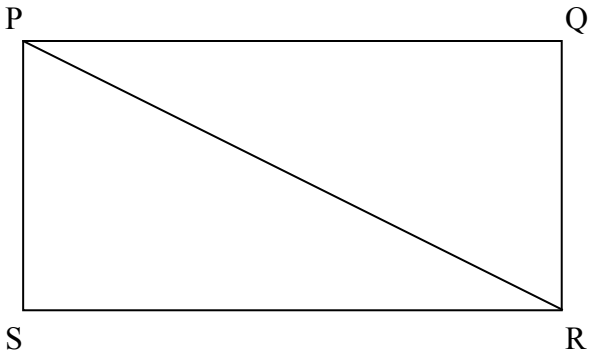
6. Use the diagram below to answer the question that follows.



If FG | | SP and $\angle 8 = 57°$, then which of the following is not a valid conclusion?

A. $\angle 4 + \angle 2 = 114°$
B. $\angle 2$ and $\angle 7$ are supplementary angles
C. $\angle 1 \cong \angle 3 \cong \angle 5 = 123°$
D. $\angle 6 \cong \angle 3$

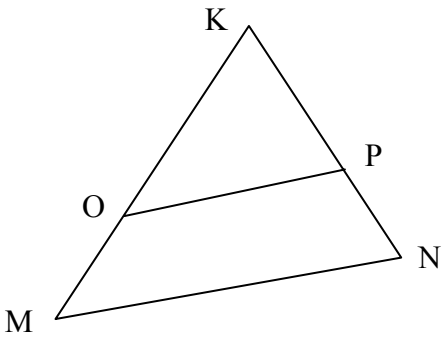
7. Use the diagram below to answer the question that follows.



PQRS is a rectangle. Diagonal $\overline{PR}$ divides the rectangle into two triangles, ΔPRS and ΔRPQ. Which of the following is not a valid conclusion about this figure?

A. ΔPQR is a right triangle.
B. $\angle$ S and $\angle$ Q are supplementary.
C. $\overline{PS} \perp \overline{PQ}$
D. $\angle$ SPR $\cong \angle$ RQP

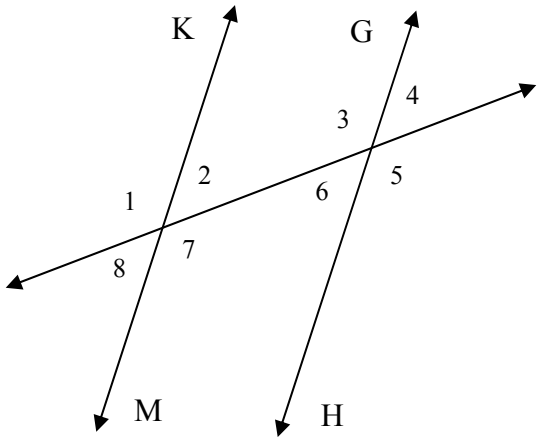
8. Use the diagram below to answer the question that follows.



ΔKMN is an isosceles triangle, with $\overline{KM} = \overline{NM}$ and $\overline{OP} \,||\, \overline{MN}$. If $\angle$ KPO = 65°, find the measure of $\angle$M.

A. 25°
B. 50°
C. 70°
D. 115°

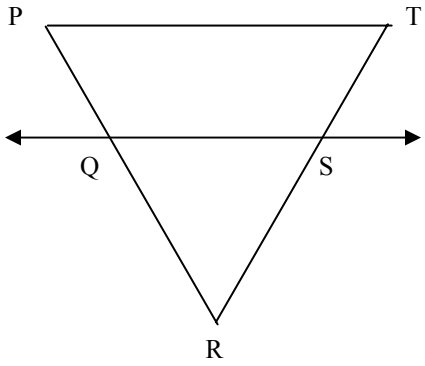
9. Use the diagram below to answer the question that follows.



If line KM is parallel to line GH, what is the sum of the measures of $\angle 1$ and $\angle 6$?

A. 90°
B. 100°
C. 180°
D. 360°

10. Use the diagram below to answer the question that follows.



ΔPTR is an equilateral triangle, and $\overline{SQ} \parallel \overline{PT}$. Find the measure of $\angle$PQS.

A. 60°
B. 90°
C. 120°
D. 180°

11. Which of the following is a solution of the equation $3x^2 + 5x - 2 = 0$?

A. - 2

B. $-\frac{1}{3}$

C. 2

D. 6

12. Find the sum of the roots of the equation $4x^2 + 11x - 20 = 0$.

A. - 5

B. - 4

C. $-\frac{11}{4}$

D. $\frac{5}{4}$

13. The sum of three angles of a triangle is 180^0. The second angle is 11^0 less than the first angle. The third angle is 3 more than twice the measure of the first angle. If x represents the number of degrees in the first angle, which equation can be used to solve for x?

A. $x^0 + (11 - x)^0 + (2x + 3)^0 = 180^0$

B. $x^0 + (x - 11)^0 + 2(x + 3)^0 = 180^0$

C. $x^0 + (11 - x)^0 + (2x + 3)^0 = 180^0$

D. $x^0 + (x - 11) + (2x + 3)^0 = 180^0$

14. Multiply: $(x - 3)(x^2 + 2x - 1)$

A. $-3x^2 - 5x + 3$

B. $-3x^2 + 7x + 3$

C. $x^3 - x^2 - 7x + 3$

D. $x^3 + 5x^2 - 7x + 3$

15. A car with a sticker price of $15,500 is sold for $12,400 after the discount. What percent is the discount?

A. 0.20%

B. 20%

C. 25%

D. 80%