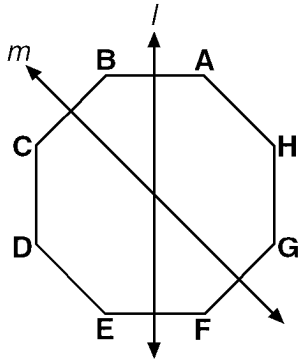
Geometry Sample Questions

Name: _____

1) In the accompanying figure, lines l and m are lines of symmetry.



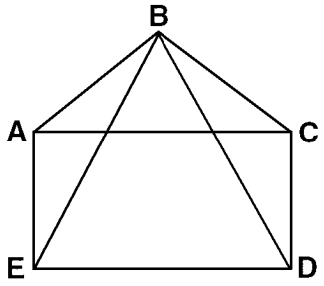
What is $r_m \circ r_l(\overline{BC})$?

A) $\overline{BC}$ C) $\overline{GF}$

B) $\overline{HA}$ D) $\overline{DE}$

2) In parallelogram LMNO, an exterior angle at vertex O measures 72°. Find the measure, in degrees, of ∠L.

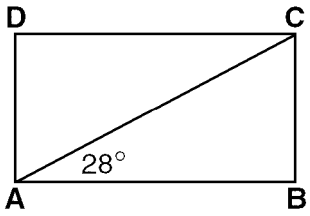
3)



Given: EA = DC
BA = BC
$\overline{EA} \perp \overline{AC}$
$\overline{DC} \perp \overline{AC}$

Prove: ∠BED ≅ ∠BDE

4) ABCD is a rectangle and diagonal $\overline{AC}$ makes an angle of 28° with base $\overline{AB}$.



If AB = 14,

(1) find the altitude of the rectangle to the nearest tenth.

(2) find the area of the rectangle to the nearest integer.

5) Which set of numbers could represent the lengths of the sides of an isosceles triangle?

A) {6,6,5} C) {3,4,5}

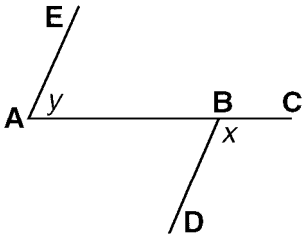
B) {15,5,10} D) {1,1,3}

6) What equation describes the locus of points equidistant from points (2,2) and (2,6)?

A) $x = 8$ C) $y = 8$

B) $y = 4$ D) $x = 4$

7) In the diagram below, $\overline{AE} \parallel \overline{BD}$.



If m∠CBD = 105°, find m∠EAB.

8) Every parallelogram is a rhombus.
TRUE FALSE

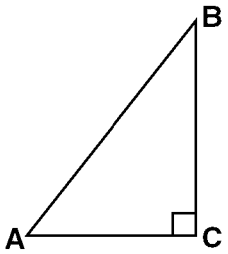
9) The diagonals of a rhombus are congruent.
TRUE FALSE

10) Which letter has horizontal but *not* vertical symmetry?

A) **B** C) **O**

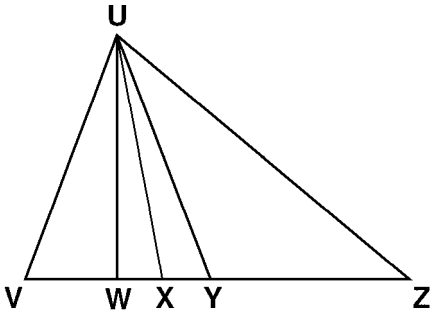
B) **X** D) **Y**

11) In right triangle ABC, m∠C = 90°.



If BC = 8 and AB = 17, express sin *B* as a ratio in fractional form.

12) In △UVZ below, $\overline{UW}$ is an altitude, $\overline{UX}$ is an angle bisector, and $\overline{UY}$ is a median.



What are two congruent segments?

A) $\overline{VW}$ and $\overline{WY}$ C) $\overline{WX}$ and $\overline{XY}$

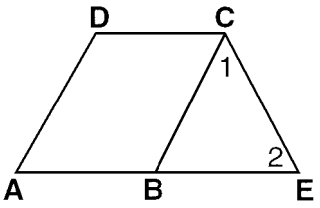
B) $\overline{VY}$ and $\overline{YZ}$ D) $\overline{VX}$ and $\overline{XZ}$

13) The perimeter of a square is $4a$. What is the area of the square?

A) 4 C) a^2

B) 16 D) $4a^2$

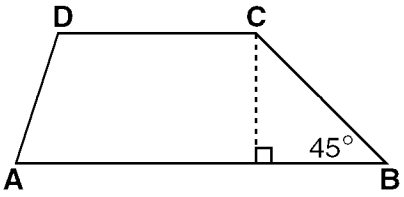
14)



Given: Parallelogram ABCD
$\overline{AB} \cong \overline{BE}$
$\angle 1 \cong \angle 2$

Prove: ABCD is a rhombus

15) ABCD is a trapezoid and m∠B = 45°.



If AB = 17, BC = 10, and CD = 13, find the area of ABCD in simplest radical form.

16) Which statement is *always* true?

A) The diagonals of a parallelogram are perpendicular.

B) The diagonals of a parallelogram are congruent.

C) The diagonals of a parallelogram bisect each other.

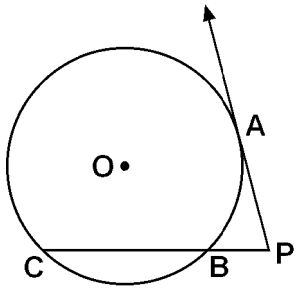
D) The diagonals of a parallelogram bisect the angles of the parallelogram.

17) For any point (x,y), which transformation is equivalent to $R_{45°} \circ R_{-135°}$?

A) $R_{-90°}$ C) $R_{90°}$

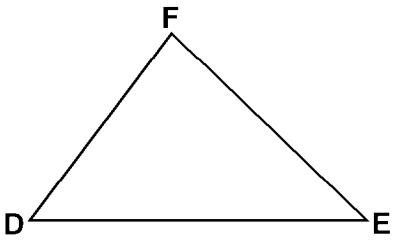
B) $r_{\text{x-axis}}$ D) $r_{y=x}$

18) In the accompanying diagram, $\overrightarrow{PA}$ is tangent to circle O at A and $\overline{PBC}$ is a secant.

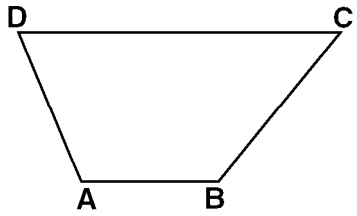


If CB = 9 and PB = 3, find the length of $\overline{PA}$.

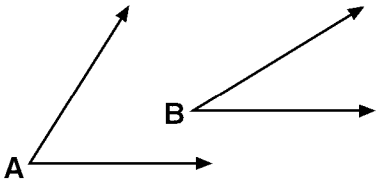
19) Show, by construction, that the perpendicular bisectors of the sides of a triangle are concurrent. Label the point of concurrency **P**.



20) Construct the altitude from A to side $\overline{DC}$ in ABCD.



21) Supply the missing reason(s) for the given proof.



(1) $m\angle A > m\angle B$	(1) Given
(2) $2\,m\angle A > 2\,m\angle B$	(2)