

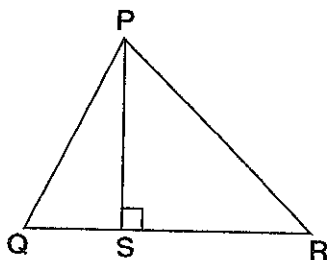
Review for Midterm

Name: _____

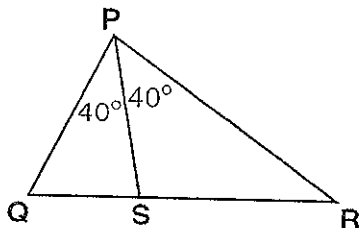
Questions 1 through 3 refer to the following:

In the given diagram, what type of line segment is \overline{PS} ?

1)

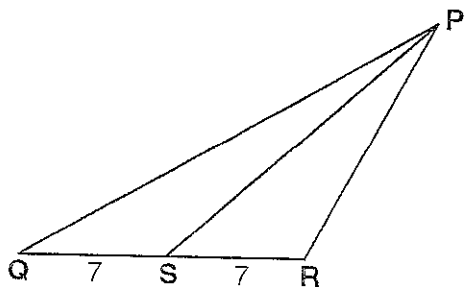


- A) median
B) altitude
C) angle bisector



- A) median
B) altitude
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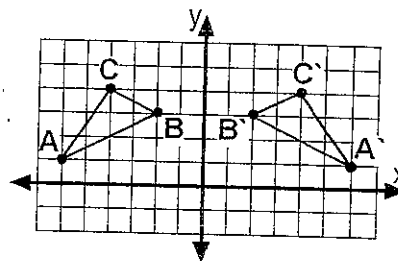
3)



- A) median
B) angle bisector
C) altitude

- 4) Under a dilation with respect to the origin, the image of $P(-15,6)$ is $P'(-5,2)$. What is the scale of dilation?
A) 10 B) $\frac{1}{3}$ C) -4 D) 3
- 5) If the point $(2,-5)$ is reflected in the line $y=x$, then the image is
A) $(-5,-2)$ C) $(5,-2)$
B) $(-5,2)$ D) $(-2,5)$
- 6) If point $R'(6,3)$ is the image of point $R(2,1)$ under a dilation with respect to the origin, what is the constant of the dilation?
A) 1 B) 2 C) 3 D) 6

- 7) In the accompanying diagram, $\triangle A'B'C'$ is the image of $\triangle ABC$.



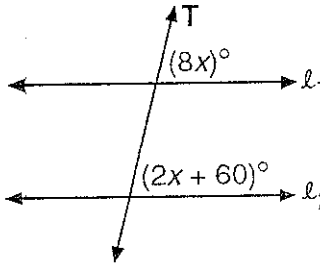
Which type of transformation is shown in the illustration?

- A) line reflection C) dilation
B) translation D) rotation
- 8) Under a dilation where the center of dilation is the origin, the image of $A(-2,-3)$ is $A'(-6,-9)$. What are the coordinates of B' , image of $B(4,0)$ under the same dilation?
A) $(-4,0)$ C) $(12,0)$
B) $(-12,0)$ D) $(4,0)$

9) The point $(-3, -2)$ is reflected in the origin. The coordinates of its image are

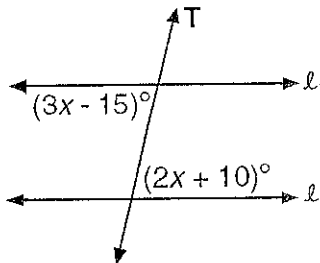
- A) $(-2, -3)$ C) $(3, 2)$
 B) $(2, 3)$ D) $(-3, 2)$

10) What is the value of x that makes $l_1 \parallel l_2$?



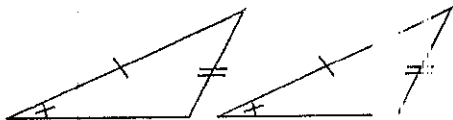
- A) 10 B) 12 C) 6 D) 20

11) What is the value of x that makes $l_1 \parallel l_2$?



- A) 37 B) 35 C) 5 D) 25

12) What is the congruence correspondence, if any, that will prove the given triangles congruent?



- A) AAS C) SAS
 B) SSA D) none

13) If the measures of the angles of a triangle are represented by $(x + 30)^\circ$, $(4x + 30)^\circ$, and $(10x - 30)^\circ$, the triangle must be

- A) obtuse C) scalene
 B) right D) isosceles

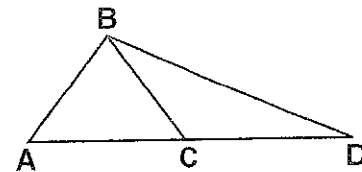
14) Which condition does *not* prove that two triangles are congruent?

- A) $ASA \cong ASA$ C) $SSS \cong SSS$
 B) $SSA \cong SSA$ D) $SAS \cong SAS$

15) What is the image of $A(8, 2)$ under R_{90° ?

- A) $(8, -2)$ C) $(-2, 8)$
 B) $(-8, 2)$ D) $(2, 8)$

16) In the figure below, $\overline{AB} \cong \overline{BC}$.



If $m\angle ABC = 72^\circ$, what is $m\angle BCD$?

- A) 108° C) 106°
 B) 72° D) 126°

17) What is the sum of the measures of the interior angles of a hexagon?

- A) 360° C) 540°
 B) 720° D) $1,440^\circ$

18) What is the measure of each exterior angle of a regular polygon having 6 sides?

- A) 45° C) 120°
 B) 72° D) 60°

19) If translation T maps point $A(-3,1)$ onto point $A'(5,5)$, what is the translation T ?

- A) $T_{2,6}$ C) $T_{8,4}$
 B) $T_{8,6}$ D) $T_{2,4}$

20) The transformation $T_{-2,3}$ maps the point $(7,2)$ onto the point whose coordinates are

- A) $(5,5)$ C) $(-14,6)$
 B) $(9,5)$ D) $(5,-1)$

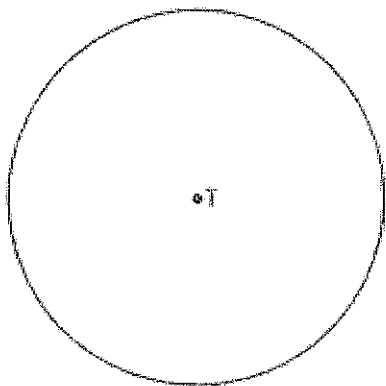
21) A translation moves $A(2,3)$ onto $A'(4,8)$. What are the coordinates of B' , the image of $B(4,6)$ under the same translation?

- A) $(12,18)$ C) $(6,11)$
 B) $(6,8)$ D) $(8,12)$

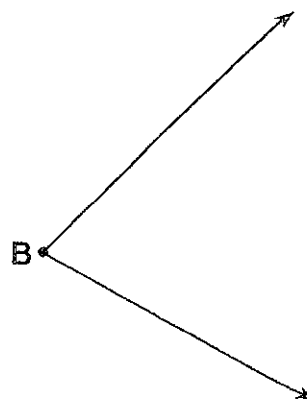
22) $\triangle ABC$ has vertices $A(-5,4)$, $B(-2,3)$ and $C(6,-1)$. Find the coordinates of the images of the vertices of $\triangle ABC$ under the given glide reflection.

$$T_{0,-3} \circ r_{y\text{-axis}}$$

23a) Use a compass and straightedge to construct an inscribed square in circle T shown below. [Leave all construction marks.]

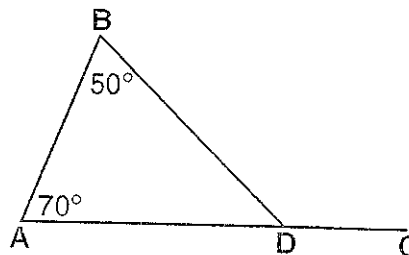


23b) Construct the ray that bisects $\angle B$.



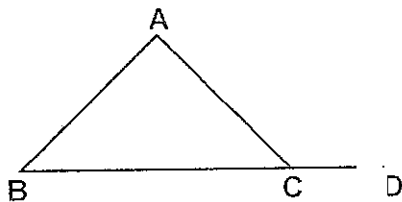
24) Point $(-3,4)$ is rotated 180° about the origin in a counterclockwise direction. What are the coordinates of its image?

25) In the accompanying diagram of $\triangle ABD$, $m\angle A = 70^\circ$ and $m\angle B = 50^\circ$.



Find the measure of exterior angle BDC .

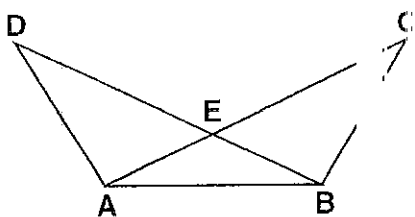
- 26) In the accompanying diagram, $\triangle ABC$ is isosceles, \overline{BC} is extended to D , $\overline{AB} \cong \overline{AC}$, and $m\angle A = 80^\circ$.



Find $m\angle ACD$.

- 27) Find the measure of each interior angle of a regular polygon of 5 sides.

- 28) Given: $\triangle ABD \cong \triangle BAC$



Name three pairs of congruent angles and the pairs of congruent sides.

- 29) What are the coordinates of A' , the image of $A(2,3)$ after a reflection in the x -axis?

- 30) Triangle ABC has coordinates $A(-1,3)$, $B(-6,5)$, and $C(-4,7)$.

- On graph paper, draw and label $\triangle ABC$.
- Graph and label $\triangle A'B'C'$, the image of $\triangle ABC$ after a reflection in the x -axis.
- Graph and label $\triangle A''B''C''$, the image of $\triangle ABC$ after a reflection in the line $y = x$.
- Graph and label $\triangle A'''B'''C'''$, the image of $\triangle ABC$ under the translation which maps (x,y) to $(x + 8, y + 3)$.

- 31) What is the slope of the line containing points $A(4,-1)$ and $B(0,2)$?

- | | |
|-------------------|------------------|
| A) $-\frac{4}{3}$ | C) $\frac{3}{4}$ |
| B) $-\frac{3}{4}$ | D) $\frac{4}{3}$ |

- 32) What are the coordinates of the midpoint of the line segment whose endpoints are $(2,6)$ and $(10,4)$?

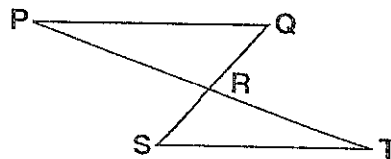
- | | |
|------------|--------------|
| A) $(4,1)$ | C) $(12,10)$ |
| B) $(5,6)$ | D) $(6,5)$ |

- 33) Write an equation of the line that is the perpendicular bisector of the line segment having endpoints of $(-4,-2)$ and $(8,4)$.

- 34) Write an equation of the line perpendicular to the line $y = 4x - 9$ and passing through the point $(3,2)$.

- 35) Write an equation of the line that is parallel to $y = 3x - 5$ and that passes through the point (1,6).

36)



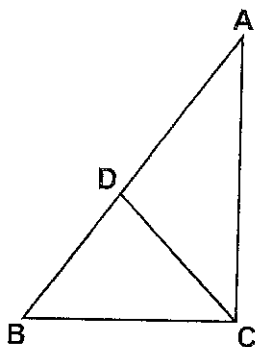
Given: $\overline{PT} \perp \overline{QS}$
 R is the midpoint of \overline{PT}
 $\overline{PQ} \cong \overline{ST}$

Prove: $\overline{PQ} \parallel \overline{ST}$

Questions 37 and 38 refer to the following:

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

37)



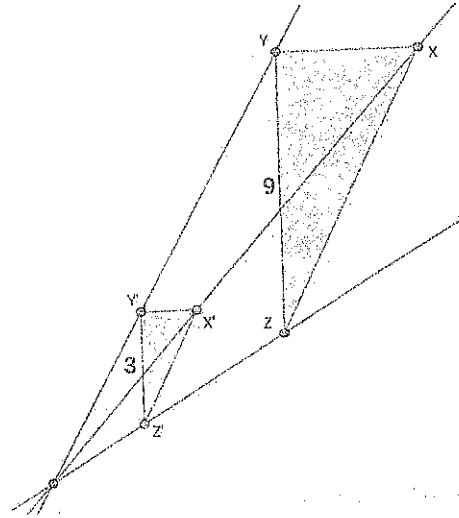
STATEMENTS	REASONS
(1) $AD = DC$ $DC = DB$	(1) Given
(2) $AD = DB$	(2)

38)



STATEMENTS	REASONS
(1) $WY = XZ$	(1) Given
(2) $XY = XY$	(2)
(3) $WX = YZ$	(3)

- 39.) A) Find the scale factor of the dilation.
 B) Determine if it is a reduction or enlargement. Explain why.



- 40.) The endpoints of \overline{DEF} are $D(1,4)$ and $F(16,4)$. Determine and state the coordinates of point E, if $DE:EF = 2:3$.

- 41.) Directed line segment PT has endpoints whose coordinates are $P(-2,1)$ and $T(4,7)$. Determine the coordinates of point J that divides the segment in the ratio 2 to 1.