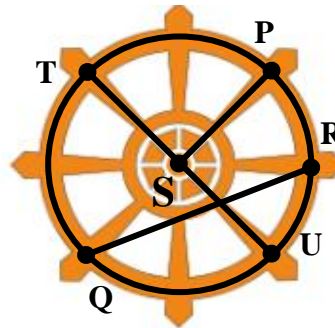


UNIT 1 part 1 – Activities 1-6

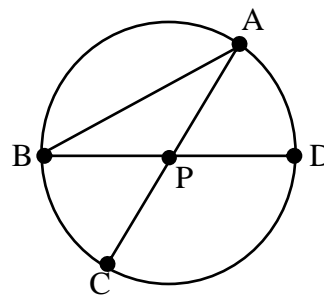
1. Identify the following on the given picture:

- a. Chord:
- b. Diameter
- c. Radius:
- d. Center:

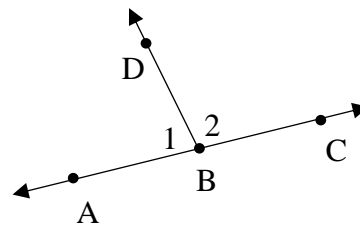


2. Use the diagram to the right to answer parts a – d.

- a. How many radii are shown? Name them.
- b. How many diameters are shown? Name them.
- c. How is a chord similar to a diameter?
 How is a chord different from a diameter?
- d. How is a radius different than a diameter?

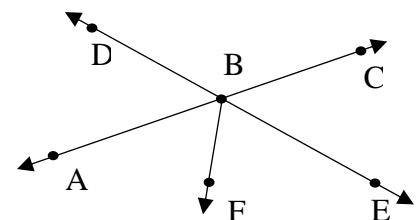


3. What are all the possible names for $\angle 2$?



4. Suppose point D is in the interior of $\angle ABC$, $m\angle ABC = 12x - 110$, $m\angle ABD = 3x + 40$, and $m\angle DBC = 2x - 10$. What is $m\angle ABC$?

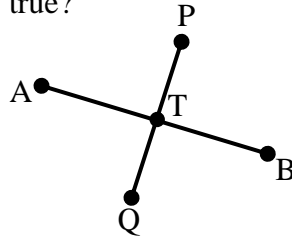
5. Identify all angle pairs in the figure that are adjacent and supplementary.



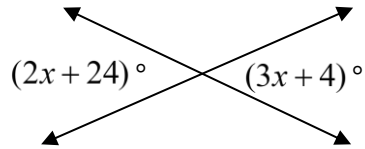
6. $\angle 1$ and $\angle 2$ are complementary, $m\angle 1 = (4x + 15)^\circ$, and $m\angle 2 = (x - 5)^\circ$. Find x .

7. In the diagram shown, $AB \perp PQ$. If $PT = TQ$, which statement is true?

- A. $AT = TB$
- B. \overline{PQ} is the perpendicular bisector of \overline{AB}
- C. \overline{AB} is the perpendicular bisector of \overline{PQ}
- D. \overline{PT} is the perpendicular bisector of \overline{AB}



8. Find the measure of the vertical angles



9. Alison states $\angle AMC + \angle CMD + \angle DMB = \angle AMB$. Which justifies Alison's statement?

- A. Angle Addition Postulate
- B. Segment Addition Postulate
- C. Construction of an Angle Bisector
- D. Construction of a Perpendicular Bisector

10. Suppose Q is the midpoint of \overline{PR} , $PQ = x + 10$, and $QR = 4x - 2$. What is the value of PR ?

11. Point E is the midpoint of \overline{DF} on a number line. If E is located at -4 and $DE = 5$, what are the possible locations of point F ?

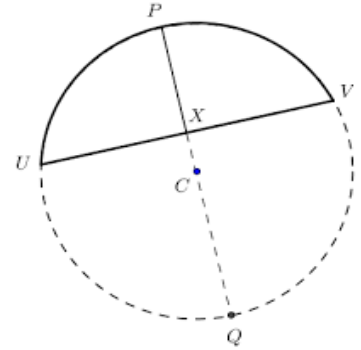
12. For \overline{AB} , point A has coordinates $(3, -5)$ and point B has coordinates $(-1, 9)$. What are the coordinates of the midpoint of \overline{AB} ?

13. Julie is given two points, $A(5, 4)$ and $B(3, -2)$. Find AB .

14. The distance between two points on a number line is 8 units. Point A is at 5. What are the possible location(s) for point B ?

15. Consider the conditional statement: If it is raining outside, then we will need an umbrella.
Identify the hypothesis and the conclusion.

16. Consider circle C, where \overline{CP} is perpendicular to \overline{UV} . What statement can be made about $\angle CXU$?



UNIT 1 part 2 – Activities 7-8

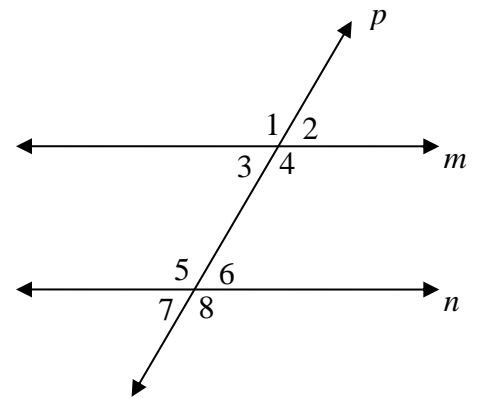
17. Use the diagram to the right to determine the relationship of the following angle pairs.

a) $\angle 1$ and $\angle 5$

b) $\angle 1$ and $\angle 8$

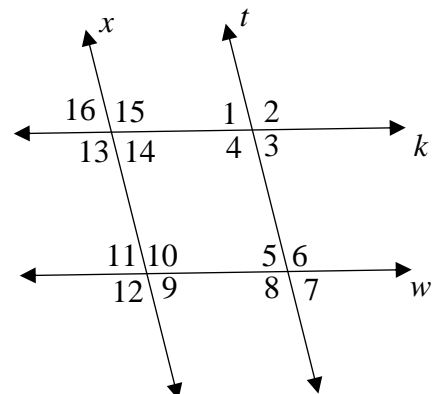
c) $\angle 3$ and $\angle 5$

d) $\angle 3$ and $\angle 6$

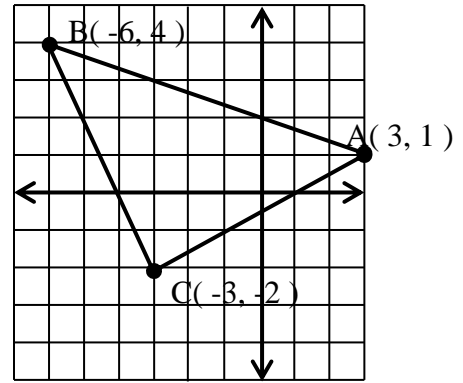


18. Billy is working on a proof given $x \parallel t$ and $k \parallel w$ as shown. He wants to write a statement that can be justified using only the Corresponding Angles Postulate. Which statement could he write? (Select all that apply)

- A. $\angle 2 \cong \angle 4$
- B. $\angle 2 \cong \angle 6$
- C. $\angle 2 \cong \angle 8$
- D. $\angle 2 \cong \angle 10$
- E. $\angle 3 \cong \angle 14$
- F. $\angle 2 \cong \angle 10$
- G. $\angle 12 \cong \angle 8$



19. How could you justify that $\triangle ABC$ is a right triangle?

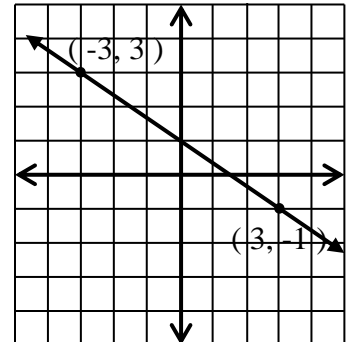


20. What is the equation of the line parallel to the line $5y + 2x = -25$ and passes through the point $(5, -3)$.

21. Write the equation of the line that is parallel to the line $2x + y = 3$ and passes through the point $(-7, 9)$.

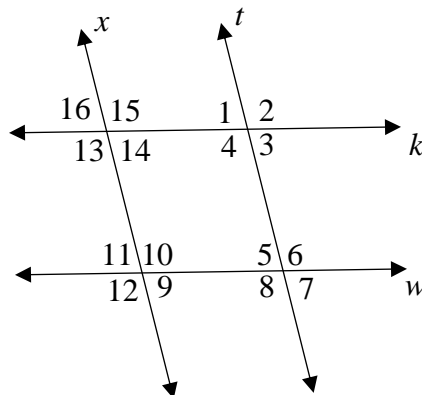
22. Write the equation of the line perpendicular to the line $x + y = 2$ and passes through the point $(-5, 8)$.

23. What is the equation that represents a line perpendicular to the line shown on the graph through the same y-intercept?



24. Two sets of parallel lines intersect as shown.

Given $m\angle 9 = 80^\circ$, what is $m\angle 2$?



UNIT 2 part 1 – Activities 9-13

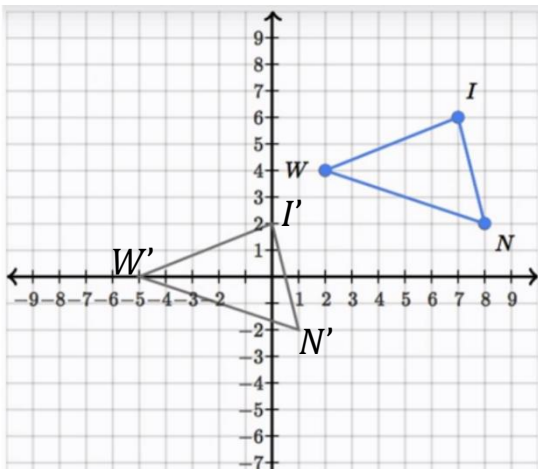
25. List all ways you can prove two triangles are congruent and draw an example of each.

26. The table shows the vertices of $\triangle ABC$ and its image after a reflection. Which is the line of reflection and the missing coordinate?

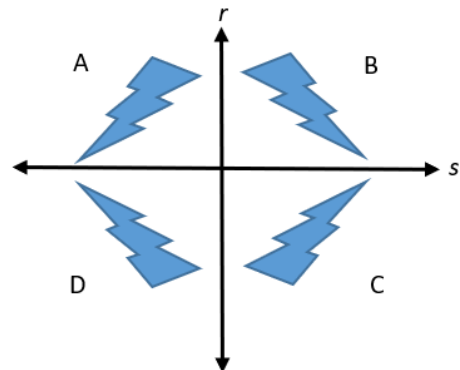
- A. a reflection across the line $x = 3$; (6, 1)
- B. a reflection across the line $x = 7$; (3, 1)
- C. a reflection across the line $x = 10$; (3, 1)
- D. a reflection across the line $y = 3$; (6, 1)

	Pre – Image	Image
A	(-4, 3)	(10, 3)
B	(-2, 5)	(8, 5)
C	(0, 1)	_____

27. Describe the transformation from $\triangle WIN \rightarrow W'I'N'$ using coordinate notation.

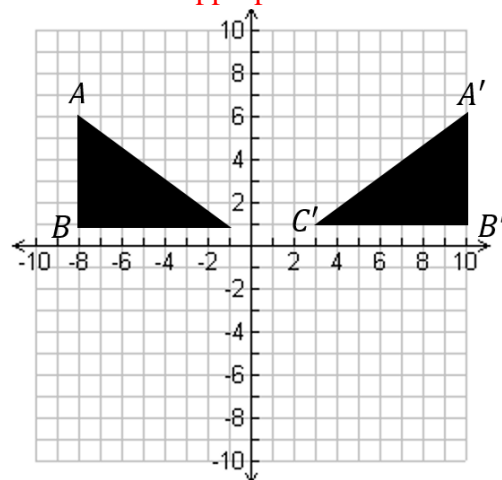


28. Describe the mapping from figure A to C as a single transformation.



29. Suppose $\triangle XYZ \cong \triangle LMN$. If $\angle X = 36^\circ$, $\angle Y = 64^\circ$, $\angle Z = 80^\circ$, and $\angle M = (5x + 4)^\circ$. Find the value of x . Hint: Draw a picture.

30. What is the transformation that proves the following two triangles are congruent. **Write your answer in the appropriate notation.**



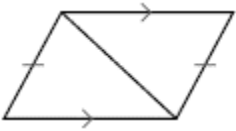
31. Suppose $\triangle QRS$ and $\triangle TUV$ are congruent right triangles such that $\angle R$ is a right angle and $\angle V = 35^\circ$. What is the measure of $\angle Q$? – Draw a picture.

32. If you have a regular pentagon, what is the angle of rotational symmetry?

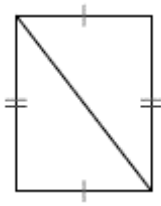
33. A regular polygon has a rotational symmetry with an angle of 36° . Identify the polygon it is referring to.

34. State the triangle congruence condition, if any, that is the most direct way to show the triangles are congruent. (Use SSS, SAS, ASA, AAS, or HL. If the triangles are not congruent, write none.)

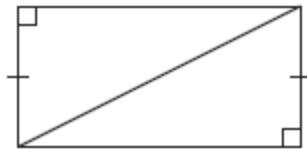
a.



b.

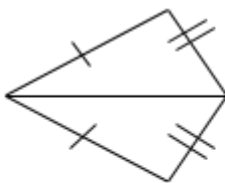


c.

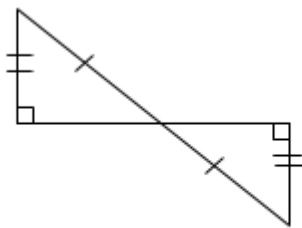


35. Given the information provided, name the method, if any, that can be used to prove the triangles congruent:

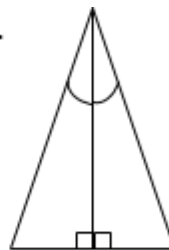
a.



b.



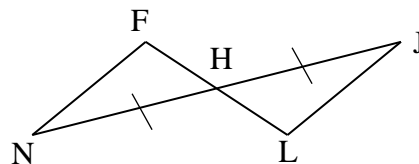
c.



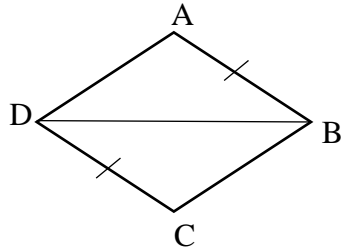
d.



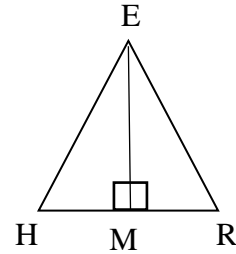
36. What additional information needs to be given to develop the proof that $\triangle FHN \cong \triangle LHJ$ by ASA congruence criteria?



37. What additional information need to be given to develop the proof that $\triangle ABD \cong \triangle CDB$ by SAS congruence criteria?



38. What additional information need to be given to develop the proof that $\triangle EMH \cong \triangle EMR$ by HL congruence criteria?



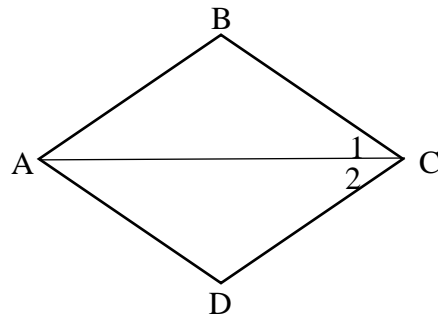
39. Which statement could be used in a proof with the reason CPCTC after proving $\triangle ABC \cong \triangle EFG$? Circle all that apply.

- A. $\overline{AC} \cong \overline{EG}$
- B. $\overline{AB} \parallel \overline{EF}$
- C. $\overline{BC} \cong \overline{FG}$
- D. $\angle BCA \cong \angle FGE$
- E. $\angle CBA \cong \angle GEF$

40. Given two triangles with the properties shown.

What additional information needs to be marked to develop the proof that $\triangle ABC \cong \triangle ADC$ by the ASA congruence criteria?

- A. $\angle 1 \cong \angle 2$ and $\angle B \cong \angle D$
- B. $\overline{AB} \cong \overline{BC}$ and $\overline{AD} \cong \overline{CD}$
- C. $\angle 1 \cong \angle 2$ and $\angle BAC \cong \angle DAC$
- D. $\overline{CD} \cong \overline{BC}$ and $\overline{AB} \cong \overline{AD}$



41. $\triangle RST$ has angle measures given by $m\angle R = 9x + 29$, $m\angle S = 93 - 5x$, and $m\angle T = 10x + 2$. What is the measure of $\angle T$

42. The measure of an angle in an isosceles triangle is 98° . What are the measures of the other two angles?

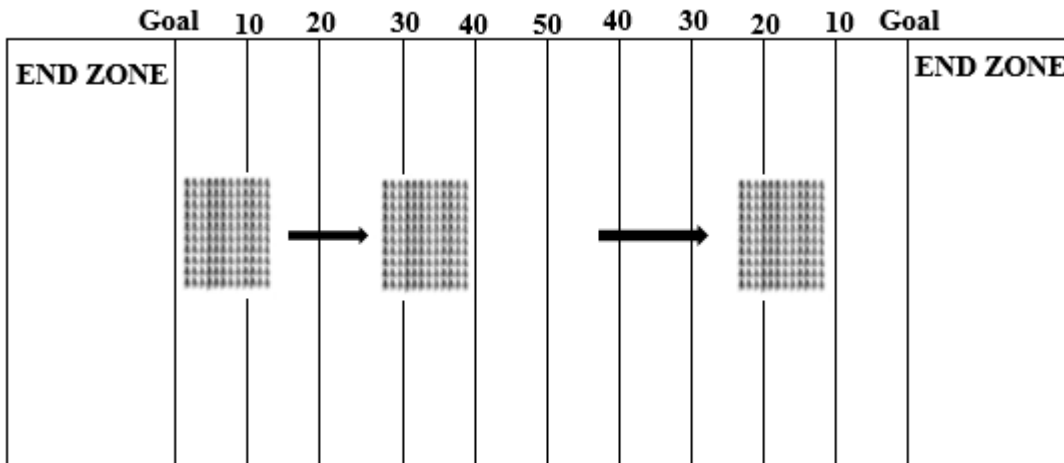
43. A translation of a rectangle under the transformation $(x, y) \rightarrow (x - 1, y + 3)$ is recorded in the table below. Complete the table if the image is then moved an additional 3 units right and 2 units up.

Point	Preimage	Original translation Image	Additional translation image
A	(2,-1)	(1,2)	
B	(2, -3)	(1, 0)	
C	(6,-1)	(5, 2)	
D	(6,-3)	(5, 0)	

44. Given the transformation recorded in the table below, state the transformation function that maps the preimage to image.

Point	Preimage	Original translation Image
A	(2,-1)	(9, -12)
B	(2, -3)	(9, -14)
C	(6,-1)	(13, -12)
D	(6,-3)	(13, -14)

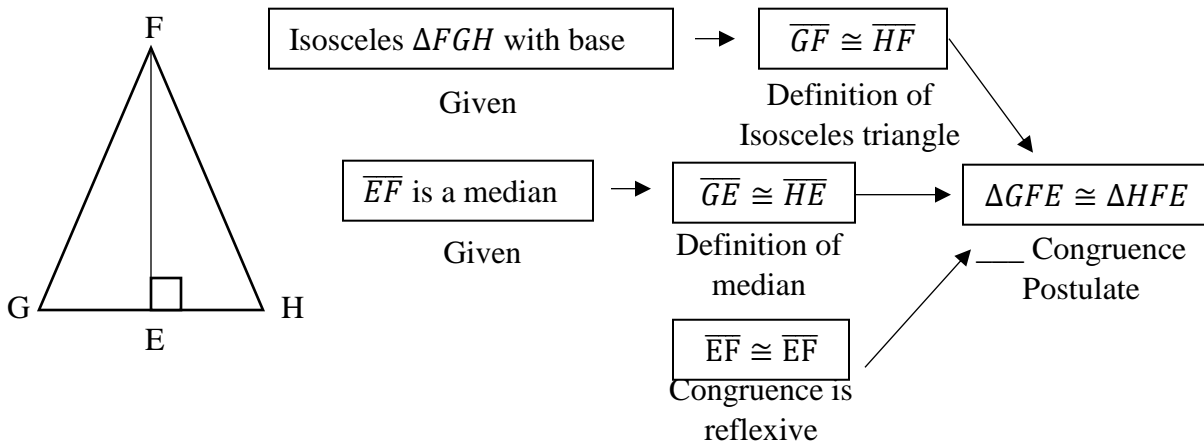
45. The band is practicing a new rigid transformation halftime routine. What happens to the distance between each band member as they move?



46. Consider the flowchart proof and its corresponding two-column proof. Fill in the missing statement and reason in the two-column proof.

Given: Isosceles $\triangle FGH$ with base \overline{GH} and median \overline{EF} .

Prove: $\triangle GFE \cong \triangle HFE$



Statement	Reasons
1. Isosceles $\triangle FGH$ with base \overline{GH}	1. Given
2.	2. Definition of isosceles triangle
3. \overline{EF} is a median	3. Given
4.	4. Definition of median
5. $\overline{EF} \cong \overline{EF}$	5.
6. $\triangle GFE \cong \triangle HFE$	6. _____ Congruence Postulate

47. Suppose $\triangle ABC \cong \triangle LMN$, and the side lengths of $\triangle ABC$ are shown in the table below.

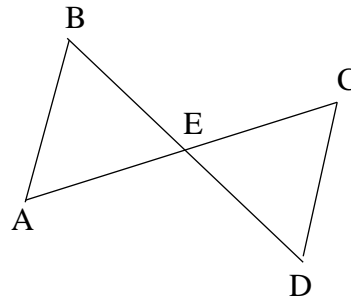
What is the longest side in $\triangle LMN$?

Side	Length (cm)
\overline{AB}	5.2
\overline{BC}	8.4
\overline{AC}	7.8

48. Complete the two-column proof.

Given: E is the midpoint of \overline{BD} , and $\overline{AE} \cong \overline{EC}$

Prove: $\triangle AEB \cong \triangle CED$



Statements	Reasons
1. E is the midpoint of \overline{BD}	1. Given
2.	2. Definition of midpoint
3.	3. Given
4. $\angle BEA \cong \angle DEC$	4.
5.	5.

49. When can you use CPCTC?

UNIT 2 part 2 – Activities 15-16

50. Complete the following charts by putting checks in the boxes that are true.

	4 Sides	Opp. Sides \parallel	Opp. Sides \cong	All Sides \cong	Opp. Angles \cong	All Angles \cong	Consecutive Angles Supplementary
Parallelogram							
Rectangle							
Rhombus							
Square							

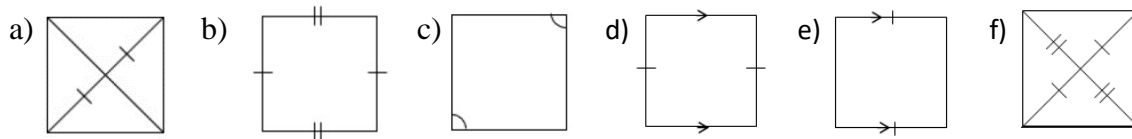
The diagonals ...	bisect each other	are congruent	bisect opposite angles	are perpendicular
Parallelogram				
Rectangle				
Rhombus				
Square				

51. Which of the following are sufficient to prove a quadrilateral is a parallelogram? Circle all that apply.

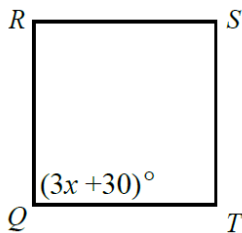
- I. Show both pairs of opposite sides parallel.
- II. Show both pairs of opposite angles are congruent.
- III. Show both pairs of opposite sides congruent.
- IV. Show one pair of opposite sides are both parallel and congruent.
- V. Show the diagonals bisect each other.

52. Quadrilateral PQRS is a parallelogram. If $m\angle P = 135^\circ$, what is $m\angle Q$? What is $m\angle R$?

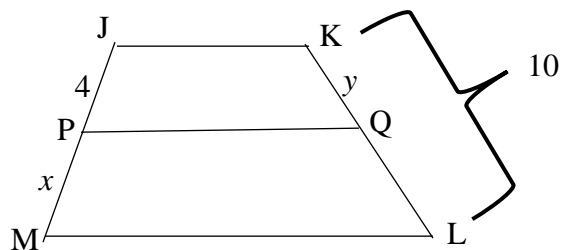
53. Which of the following must be a parallelogram? Circle all that apply.



54. Given square QRST, solve for x .

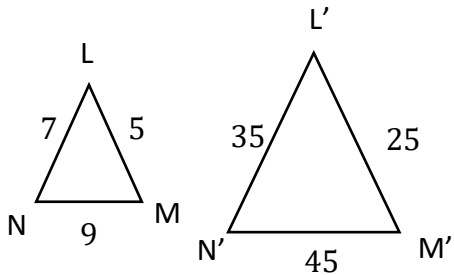


55. What values of x and y would prove that \overline{PQ} is the midsegment of trapezoid JKLM?



UNIT 3 – ACTIVITIES 17 – 18

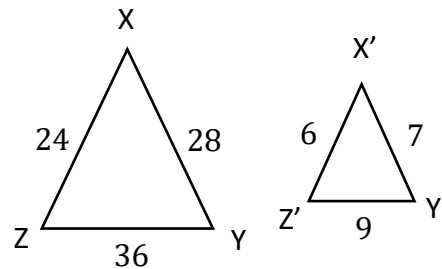
56. Classify the dilation from $\triangle LMN \rightarrow L'M'N'$ and state the scale factor.



a) Classify the dilation: _____

b) Scale factor: _____

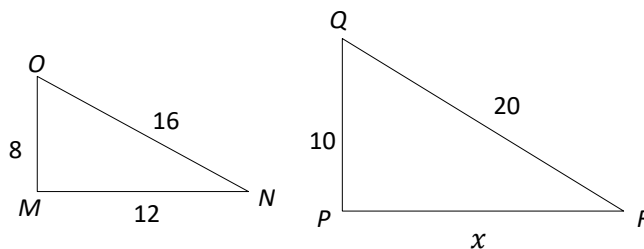
57. Classify the dilation from $\triangle XYZ \rightarrow X'Y'Z'$ and state the scale factor



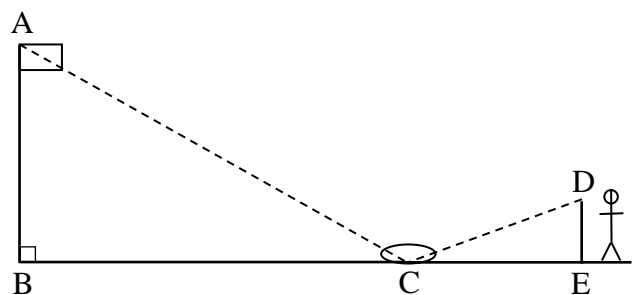
a) Classify the dilation: _____

b) Scale factor: _____

58. Given $\triangle OMN \sim \triangle QPR$, solve for x .



59. Ramon places a mirror on the ground 45 ft from the base of a flagpole. He walks backwards until he can see the top of the flagpole in the middle of the mirror. Ramon's eyes are 6 ft above the ground and he is 7.5 ft from the mirror. What is the height of the flagpole?



60. A blueprint for a rectangular deck has a length of 8 inches and a width of 5 inches. The actual deck is 9 feet wide. How long is the deck?