Math 2 Name: Key

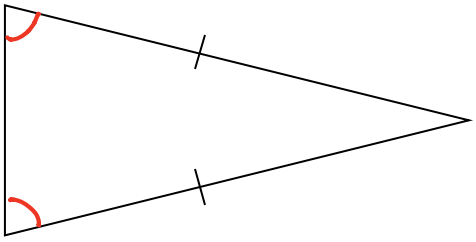
Unit 4B Day 6 Notes – Isosceles Triangle Theorem Date:_____

Isosceles Triangle: triangle with two ≅ sides + ≅ base ∠'s

(ITT)

Isosceles Triangle Theorem: If 2 sides of a triangle are congruent, then

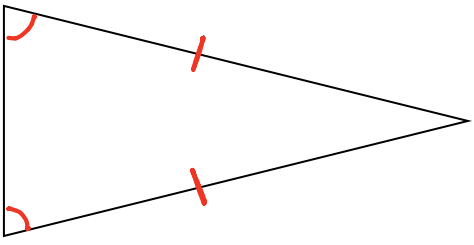
the base ∠'s of the △ are ≅.

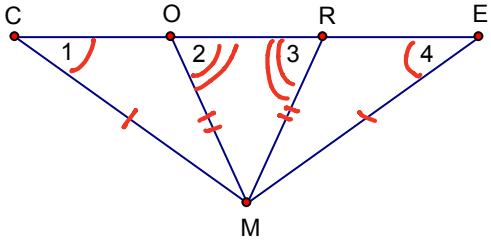


(ITTC)

Isosceles Triangle Theorem Converse: If 2 angles of a triangle are congruent, then

the two sides are ≅.



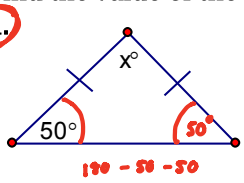


1. If $\overline{CM} \cong \overline{EM}$, then ∠1 ≅ ∠4 by ITT.

2. If $\angle 2 \cong \angle 3$, then $\overline{OM}$ ≅ $\overline{RM}$ by ITTC.

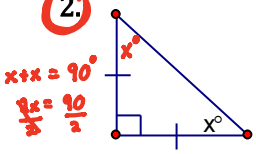
Unit 4B Day 4 CW

Find the value of the variable or question mark.

1. 

180 - 50 - 50

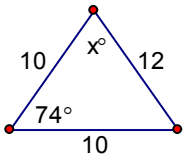
x = 80°

2. 

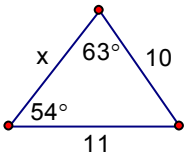
x + x = 90°

2x = 90 / 2

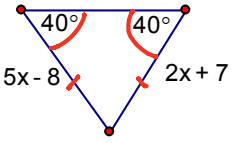
x = 45°

3. 

x = _____

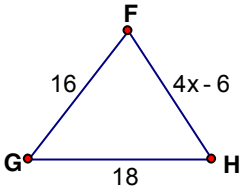
4. 

x = _____

5. 

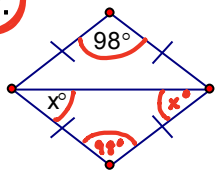
5x - 8 = 2x + 7

x = 5

6. 

∠F ≅ ∠G

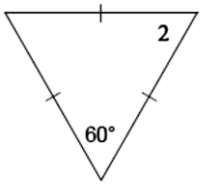
x = _____

7. 

x + x + 98 = 180

x = 41

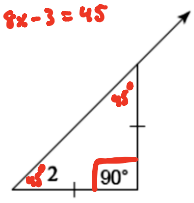
8. $m\angle 2 = 7x + 4$



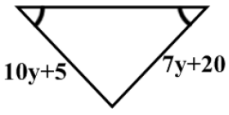
x = _____

9. $m\angle 2 = 8x - 3$

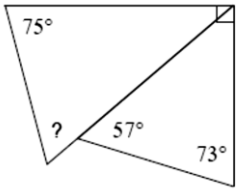
8x - 3 = 45



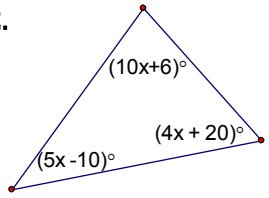
x = 6

10. 

y = _____

11. 

? = _____

12. 

x = _____

13. Given the triangles at the right, which of the following can you conclude true?

a. ∠D ≅ ∠R

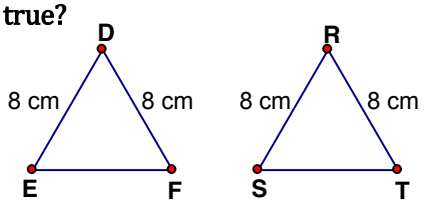
b. $\overline{DE} \cong \overline{DF}$

c. $\overline{DF} \cong \overline{RT}$

d. ∠E ≅ ∠F

e. ∠E ≅ ∠S

f. ∠S ≅ ∠T

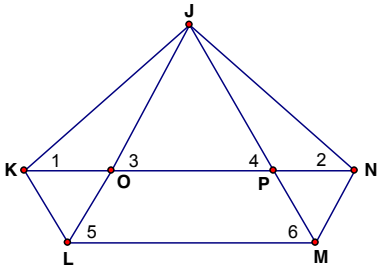


14. Based on the given information, make a conclusion and justify.

a. If ∠5 ≅ ∠6, then _____ ≅ _____ by _____.

b. If $\overline{JK} \cong \overline{JN}$, then _____ ≅ _____ by _____.

c. If ∠3 ≅ ∠4, then _____ ≅ _____ by _____.



15. a. If m∠1 = 35, then m∠ABC = _____.

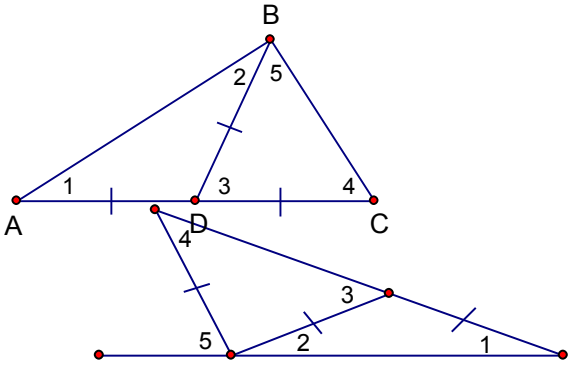
b. If m∠1 = *n*, then m∠ABC = _____.

16. a. If m∠1 = 20, then m∠3 = _____,

m∠4 = _____, m∠5 = _____.

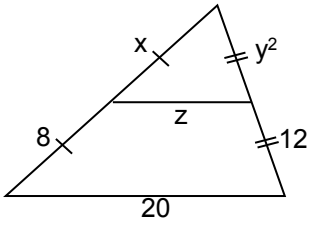
b. If m∠1 = *x*, then m∠3 = _____,

m∠4 = _____, m∠5 = _____.

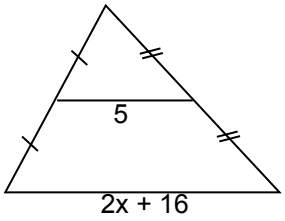


Find the values of the variables. You must show all work to receive full credit. Figures are not drawn to scale.

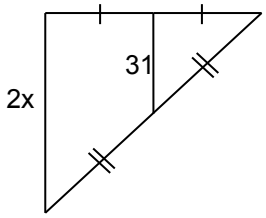
17. x = ____ y = ____ z = ____



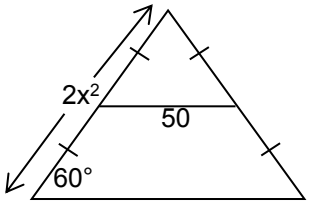
18. x = ____



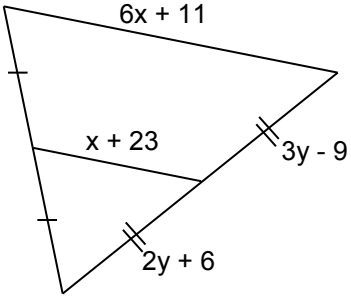
19. x = ____



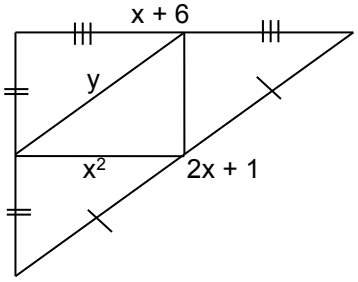
20. x = ____



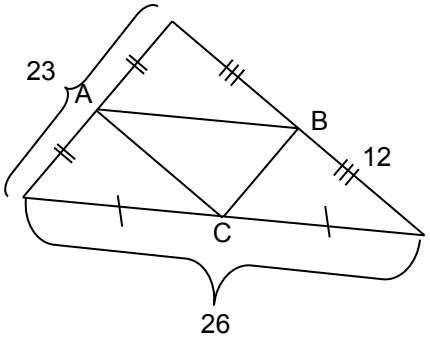
21. x = ____ y = ____



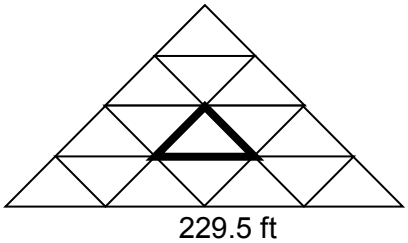
22. x = ____ y = ____



23. Find the perimeter of ΔABC.

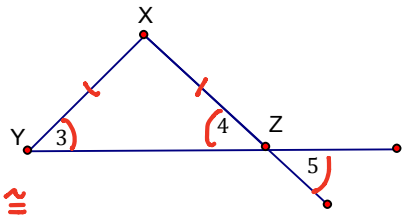


24. One side of the Rock and Roll Hall of Fame is an isosceles triangle made up of smaller triangles based on mid-segments. The length of the base of the building is 229.5 feet. What would the base of the bold triangle be?



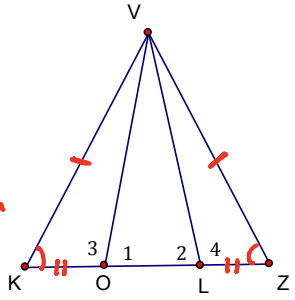
Unit 4B Day 4 HW

1. Given: $\overline{YX} \cong \overline{XZ}$
   Prove: $\measuredangle 3 \cong \measuredangle 5$



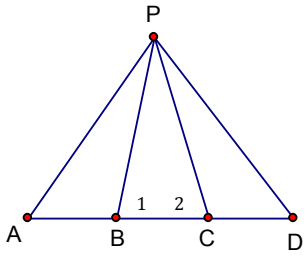
1). $\overline{YX} \cong \overline{XZ}$	Given
2). $\angle 3 \cong \angle 4$	ITT
3). $\angle 4 \cong \angle 5$	Vertical $\angle$'s $\cong$
4). $\angle 3 \cong \angle 5$	Substitution

2. Given: $\overline{KV} \cong \overline{VZ}$
   $\overline{KO} \cong \overline{LZ}$
   Prove: $\Delta KVO \cong \Delta$ZVL

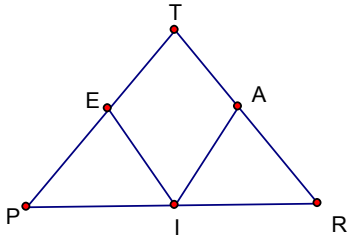


1). $\overline{KV} \cong \overline{VZ}$; $\overline{KO} \cong \overline{LZ}$	Given
2). $\angle K \cong \angle Z$	ITT
3). $\Delta KVO \cong \Delta ZVL$	SAS $\cong$

3. Given: $\measuredangle 1 \cong \measuredangle 2$
   $\overline{AB} \cong \overline{CD}$
   $\overline{AP} \cong \overline{PD}$
   Prove: $\Delta ABP \cong \Delta DCP$



4. Given: $\overline{PT} \cong \overline{TR}$
   $\overline{EP} \cong \overline{AR}$
   I is the midpoint of $\overline{PR}$
   Prove: $\overline{EI} \cong \overline{AI}$



5. Given: M is the midpoint of $\overline{JK}$
   $\angle 1 \cong \angle 2$
   Prove: $\overline{JG} \cong \overline{MK}$