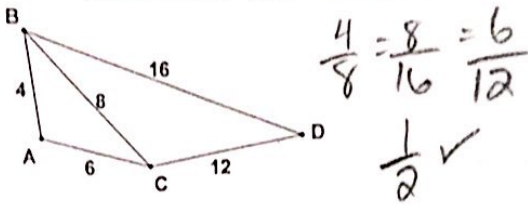


Unit 2 (Part I) Review – Honors Math 2

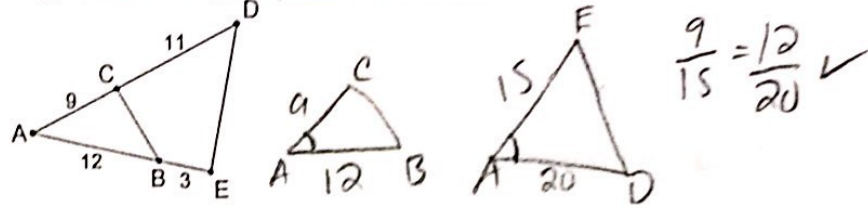
Name: Bagpasen

If the triangles in 1 – 3 can be proved similar, (1) Complete the similarity statement and (2) Tell which theorem or postulate you would use. If they cannot be proved similar then write "None."

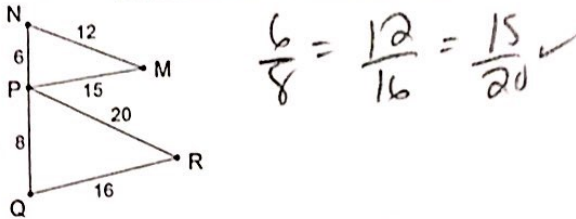
1. $\triangle ABC \sim \triangle CBD$ by SSS



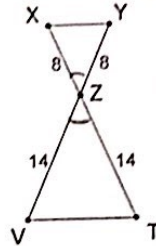
2. $\triangle ABC \sim \triangle ADE$ by SAS



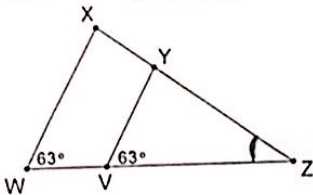
3. $\triangle NMP \sim \triangle QRP$ by SSS



4. $\triangle XYZ \sim \triangle VTZ$ by SAS



5. $\triangle YVZ \sim \triangle XWZ$ by AA

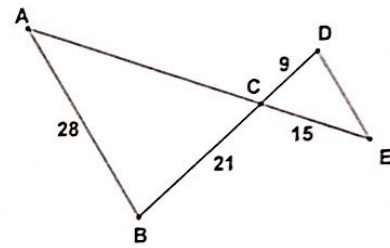


6. $\triangle BAC \sim \triangle DEC$

a. What is the scale factor of $\triangle BAC$ to $\triangle DEC$? $\frac{3}{7}$

b. Find AC. $\frac{21}{9} = \frac{AC}{15}$ 35 $\frac{21}{9} = \frac{7}{3}$

c. Find DE. $\frac{21}{9} = \frac{28}{DE}$ 12



Tell why each pair of triangles is similar (AA, SAS, or SSS). Then find the value of x.

7. SAS

$\frac{4}{x+4} = \frac{5}{15}$

$60 = 5x + 20$
 $5x = 40$
x = 8

8. AA

$\frac{24}{14} = \frac{22}{x}$

x = 77/6

9. Midsegment of a Triangle:

a. The midsegment of a triangle joins the midpoints of two sides of a triangle.

b. The midsegment is parallel to the third side and is half the length of the third side.

10. The sum of the measures of the angles of a triangle is 180° .

11. The exterior angle of a triangle is equal to sum of the remote interior angles of the triangle.

12. Triangle Proportionality Theorem and its converse:

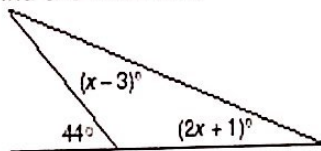
a. A line that is parallel to one side of a triangle divides the other two sides

proportionally.

b. If a line intersects 2 sides of a triangle so that it divides those 2 sides proportionally, then it is

parallel.

13. Find the value of x .



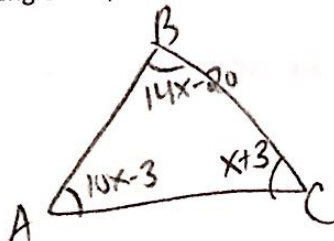
$$44 = x - 3 + 2x + 1$$

$$44 = 3x - 2$$

$$46 = 3x$$

$$x = \frac{46}{3}$$

14. In triangle ABC, $m\angle A = 10x - 3$, $m\angle B = 14x - 20$, and $m\angle C = x + 3$. Find x , $m\angle A$, $m\angle B$, and $m\angle C$.



$$10x - 3 + 14x - 20 + x + 3 = 180$$

$$25x - 20 = 180$$

$$25x = 200$$

$$x = 8$$

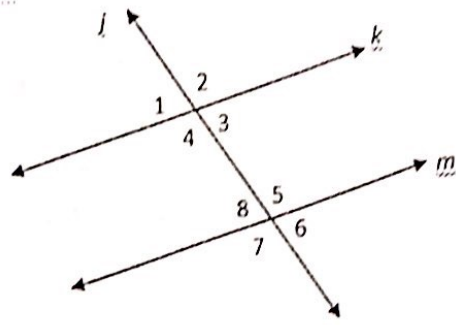
$$m\angle A = 77$$

$$m\angle B = 92$$

$$m\angle C = 11$$

For items 15 – 19, classify each pair of angles as corresponding, alternate interior, alternate exterior, same-side interior, vertical, or a linear pair.

15. $\angle 1$ and $\angle 3$ Vertical
16. $\angle 4$ and $\angle 8$ Same side interior
17. $\angle 3$ and $\angle 6$ Corresponding
18. $\angle 8$ and $\angle 5$ Linear pair
19. $\angle 4$ and $\angle 5$ Alt. interior angles



Use the figure above for items 20 -25. In the figure, line k is parallel to line m.

20. If $m\angle 1 = 78^\circ$, find $m\angle 6$. 78°
21. If $m\angle 1 = 78^\circ$, find $m\angle 7$. 102°
22. If $m\angle 2 = 3x$ and $m\angle 5 = 105$, find the value of x .

$$3x = 105$$

$$x = 35$$

23. If $m\angle 3 = 2x + 15$ and $m\angle 5 = 3x - 5$, find $m\angle 7$.

$$2x + 15 + 3x - 5 = 180$$

$$5x + 10 = 180$$

$$5x = 170$$

$$x = 35$$

$$m\angle 7 = m\angle 5 = 100$$

24. If $m\angle 4 = 7x - 18$ and $m\angle 5 = 5x + 20$, find $m\angle 8$.

$$7x - 18 = 5x + 20$$

$$2x = 38$$

$$x = 19$$

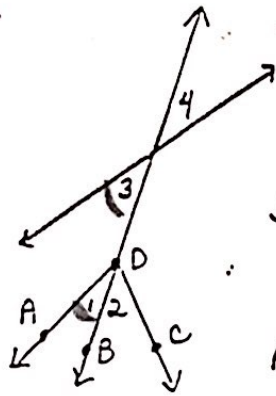
$$m\angle 5 = 115$$

$$m\angle 8 = 65$$

25. If $k \perp j$, find $m\angle 6$.

$$90^\circ$$

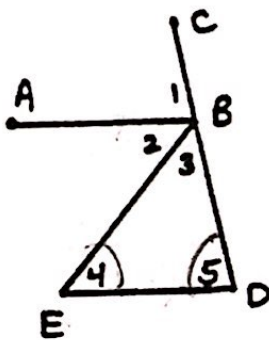
26.



Given: \overrightarrow{DB} bisects $\angle ADC$
 $\angle 1 \cong \angle 3$
 Prove: $\angle 2 \cong \angle 4$

Statements	Reasons
1) \overrightarrow{DB} bisects $\angle ADC$	Given
2) $\angle 1 \cong \angle 3$	Given
3) $\angle 1 \cong \angle 2$	Ref. \angle Bisector
4) $\angle 3 \cong \angle 4$	Vertical Angles
5) $\angle 2 \cong \angle 4$	Transitive

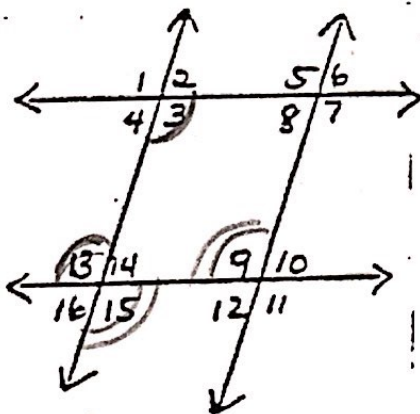
27.



Given: $\overline{AB} \parallel \overline{ED}$
 $\angle 4 \cong \angle 5$
 Prove: $\angle 1 \cong \angle 2$

Statements	Reasons
1) $\overline{AB} \parallel \overline{ED}$	Given
2) $\angle 4 \cong \angle 5$	Given
3) $\angle 5 \cong \angle 1$	Corresp.
4) $\angle 4 \cong \angle 2$	Alt. interior
5) $\angle 1 \cong \angle 2$	Transitive

28.



Given: $\angle 3 \cong \angle 13$
 $\angle 15 \cong \angle 9$
 Prove: $\angle 1 \cong \angle 11$

$3 = 13$ $1 = 3$

$15 = 9$ $13 = 15$

$9 = 11$

$9 = 13$

$9 = 1$

$11 = 1$

Statements	Reasons
1) $\angle 3 \cong \angle 13$	Given
2) $\angle 15 \cong \angle 9$	Given
3) $\angle 9 \cong \angle 11$	vertical
4) $\angle 1 \cong \angle 3$	vertical
5) $\angle 13 \cong \angle 15$	vertical
6) $\angle 1 \cong \angle 11$	Trans.