Name_____

Final Review – Chapter 4 – Homework

Identify each statement as true or false.

1. _____ The slope of a line depends on which points on the line you choose to calculate it.

2. _____ If two parallel lines are cut by a transversal then the alternate interior angles are supplementary.

3. _____ If m is the slope of AB, then the slope of the perpendicular bisector of AB is –m.

4. _____ If any two lines are cut by a transversal then the alternate exterior angles are congruent.

5. _____ If a graph has slope q and y-intercept (0, r) then the equation for the line is $y = qx + r$.

6. _____ If lines x, y, and z are in the same plane, and $x \perp y$ and $y \perp z$, then $x \perp z$.

7. _____ If two lines are cut by a transversal forming pairs of congruent corresponding angles, congruent alternate interior angles, or congruent alternate exterior angles, then the lines are parallel.

8. _____ If two distinct lines on a graph have the same slope then they are parallel.

9. _____ If m is the slope of $\overline{AB}$, then the slope of the perpendicular bisector of $\overline{AB}$ is $\frac{-1}{m}$.

10. _____ If lines x, y, and z are in the same plane, and $x \perp y$ and $y \perp z$, then $x \parallel z$.

.

11. _____ You can determine the slope of a segment if you are given only the coordinates of its midpoint.

12. The measure of an angle is twice the measure of its complement. Find the measures of the two angles.

    a. 90°, 180° b. 45°, 90°
    c. 30°, 60° d. 60°, 120°

13. Find the midpoint of the segment connecting points (3,5) and (-1, 9)

14. Write an equation of any line perpendicular to the line:

$$15x - 5y = -20$$

15. Write the equation of the line through point B(4,7) and perpendicular to the line:

$$4x + 2y = 8$$

16. Determine the slope and y-intercept of the following line.

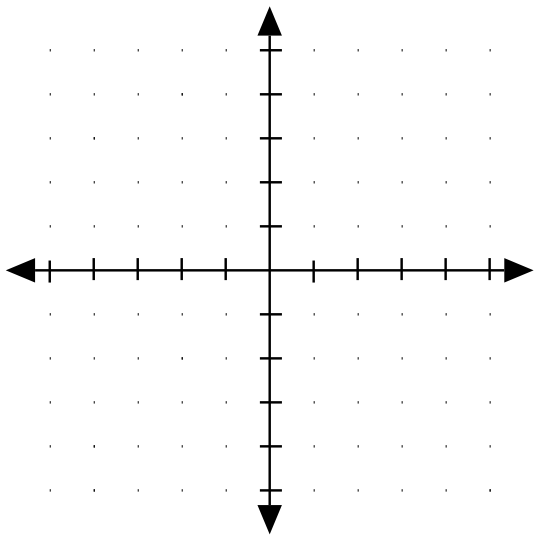
$$4x + 6y = -12$$

m = _____

y-int = _____

17. Graph the linear equation. Label your axis.

$$3x - 2y = 8$$



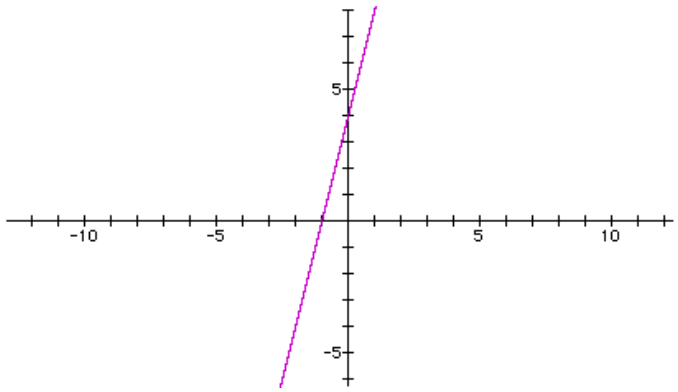
18. Determine if $\overline{AB} \perp \overline{CD}$ or not? Show why(not).

A(2, 5)
B(4, 8)
C(3, 2)
D(– 9, 10)

---

19. One endpoint of $\overline{AB}$ is A(–1, 9). The midpoint is (– 3, 6). Find the coordinates of the other endpoint.

20. After examining the graph below, write the equation of the line.



21. Write the equation of the line which is the **perpendicular bisector** of $\overline{AB}$

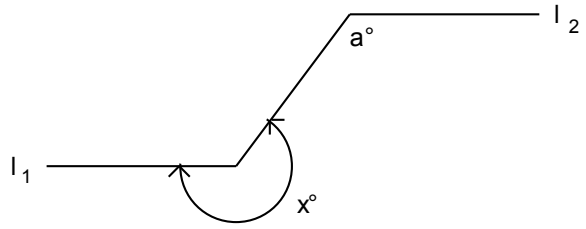
A(9,– 1) and B(1,7).

22. The coordinates of ΔABC are A(0,0), B(8,3), and C(2,9). Find the equation of the line containing median $\overline{AM}$.

23. Find the intersection of the following linear equations:

$4x + 5y = -7$ and $2x - 3y = 13$

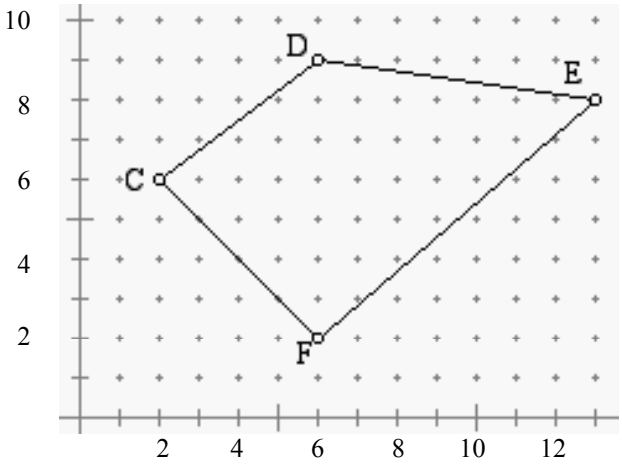
24. Find y if the line thru (7,8) and (3,y) has a slope of $\frac{3}{2}$



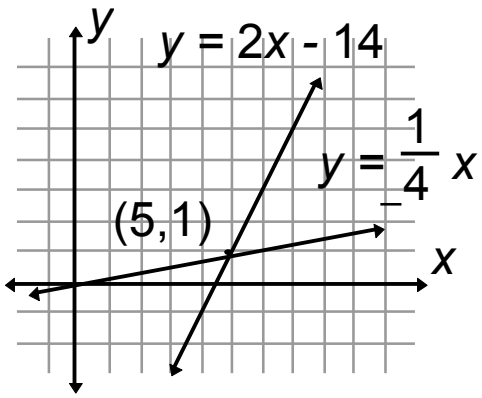
25. In the figure above, if $l_1 // l_2$, what is the value of x in terms of a?

a. 180 – a
b. 180 + a
c. 270 – a
d. 360 + a
e. 360 – a

26. Determine whether the figure is a trapezoid, a parallelogram, a rectangle or an ordinary quadrilateral. Explain how you know.



27. What's wrong with this picture?

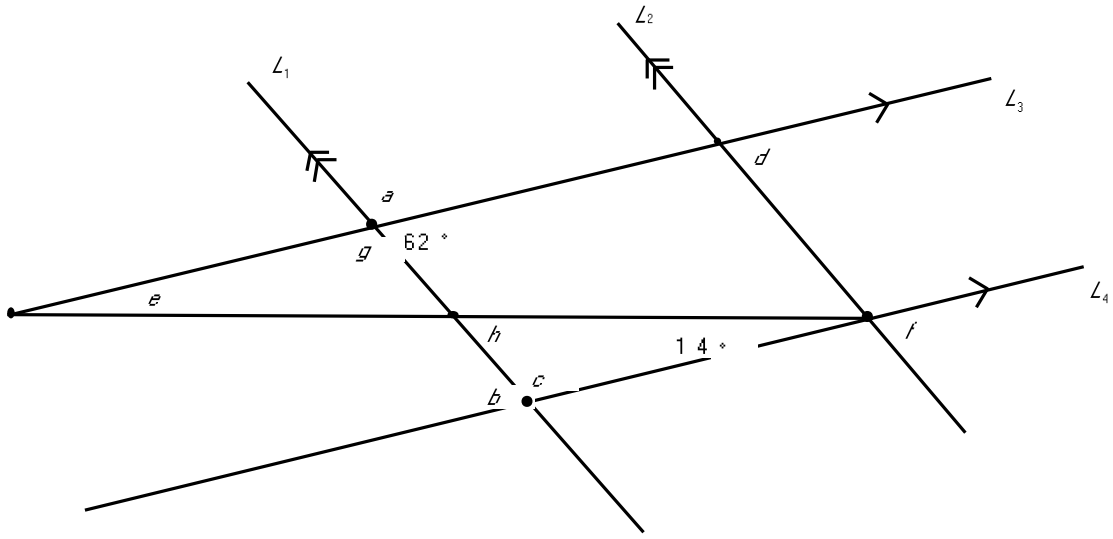


---

28. Find the measure of each lettered angle *a*–*h* in the figure below. l_1 // l_2 and l_3 // l_4

a =_____ b =_____ c =_____ d =_____

e =_____ f =_____ g =_____ h =_____



29. State the reasons to justify the following: (1 pt each)

Equation: $x - 2 = \frac{2x+8}{5}$

a) $x - 2 = \frac{2x+8}{5}$ _____

b) $5(x - 2) = 2x + 8$ _____

c) $5x - 10 = 2x + 8$ _____

d) $3x - 10 = 8$ _____

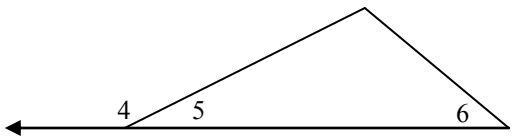
e) $3x = 18$ _____

f) $x = 6$ _____

30. Complete the following proof: (1 pt each)

Given: $m\angle 4 + m\angle 6 = 180$

Prove: $m\angle 5 = m\angle 6$



a) $m\angle 4 + m\angle 6 = 180$ _____

b) $m\angle 4 + m\angle 5 = 180$ _____

c) $m\angle 4 + m\angle 5 = m\angle 4 + m\angle 6$ _____

d) $m\angle 4 = m\angle 4$ _____

e) $m\angle 5 = m\angle 6$ _____

Name_____

Final Review – Chapter 5

1) Match the following statements with the name of the conjectures.

_____ An equilateral triangle is equiangular, and conversely, and equiangular triangle is equilateral.

_____ The measure of an exterior angle of a triangle is equal to the sum of the measures of the remote interior angles.

_____ If a triangle has two congruent angles, then it is an isosceles triangle.

_____ In an isosceles triangle, the bisector of the vertex angle is also the altitude and median to the base

_____ The sum of the measures of the angles in a triangle are 180 degrees.

_____ In a triangle, the longest side is opposite the angle with greatest measure, and the shortest side is opposite the angle with the least measure.

_____ The sum of the lengths of any tow sides of a triangle is greater than the length of the third side

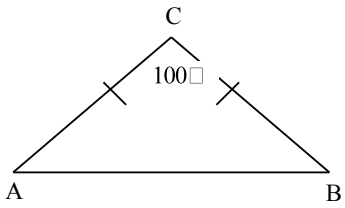
_____ If a triangle is isosceles, then its base angles are congruent.

_____ If two angles of one triangle are equal in measure to tow angles of another triangle, then the third angle in each triangle is equal in measure to the third angle in the other triangle.

A) Triangle Sum Conjecture
B) Third Angle Conjecture
C) Triangle Inequality Conjecture
D) Side-Angle Inequality Conjecture
E) Triangle Exterior Angle Conjecture
F) Isosceles Triangle Conjecture
G) Converse of the Isosceles Triangle Conjecture
H) Equilateral Triangle Conjecture
I) Vertex Angle Bisector Conjecture

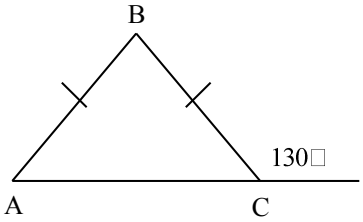
---

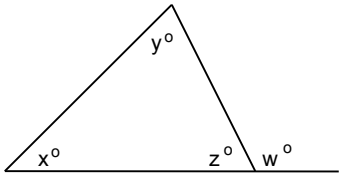
2) m ∠ CAB =



---

3) m ∠ BAC =



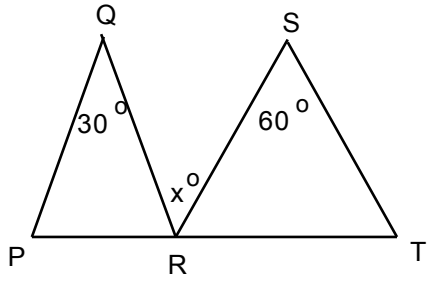


4) In the figure above, x + y = 110°. What is the value of w + x + y + z =?

a. 290° b. 250° c. 235° d. 220°
e. It cannot be determined given info.

5) In ΔABC, AB = 12, BC = 7, and AC = 9. The largest angle in ΔABC is

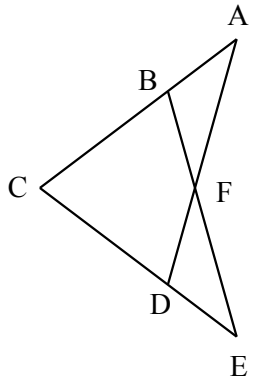
---



6) In the figure above, if PQ = QR, RS = ST, and PRT is a line segment, then x = ?

a. 35° b. 45° c. 55° d. 65° e. 75°

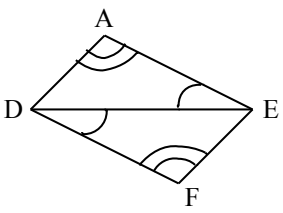
Given the particular congruence shown, list the corresponding sides of the two triangles named.



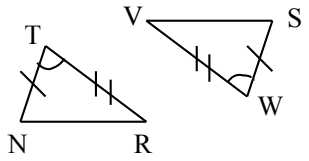
7) ΔABF ≅ ΔEDF

Using the given information , state the reason why each pair of triangles are **congruent**.

8) Δ ADE ≅ Δ FED _____



9) Δ NTR ≅ Δ SWV _____

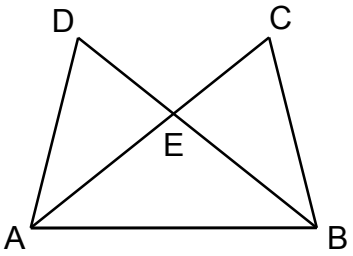


---

10) $\overline{AC} \cong \overline{BD}$ ∠CAB≅∠DBA
ΔADB ≅ Δ _____

Which conjecture supports the congruence statement?

_____

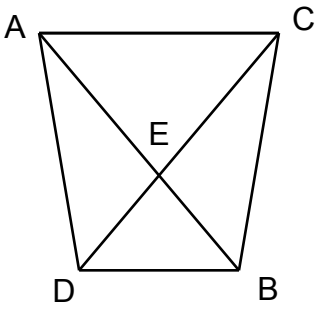


---

11) ∠CAD ≅ ∠ACB; ∠ CDA ≅ ∠ABC

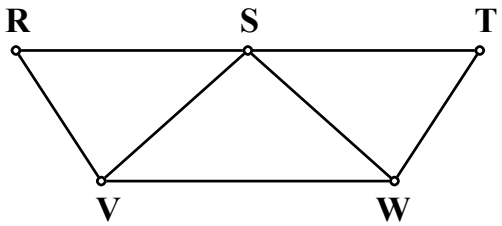
Which conjecture tells you that ΔACD ≅ ΔCAB?

_____



Given: $\angle R \cong \angle T$
$\overline{RV} \cong \overline{TW}$
S is midpoint of $\overline{RT}$

Prove: ΔSVW is isosceles

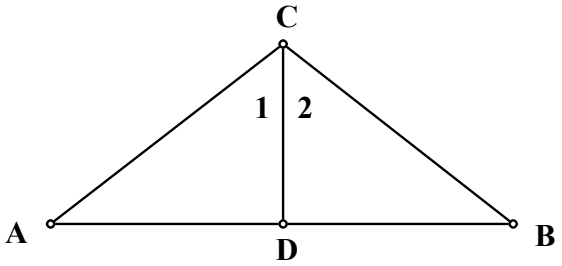


Statements	Reasons
12. S is midpoint of $\overline{RT}$	12. Given
13. $\overline{RS} \cong \overline{TS}$	13. _____
14. $\angle R \cong \angle T$	14. Given
15. $\overline{RV} \cong \overline{TW}$	15. Given
16. $\Delta VRS \cong \Delta WTS$	16. _____
17. $\overline{VS} \cong \overline{WS}$	17. _____
18. ΔSVW is isosceles Δ	18. _____

Given: Isosceles ΔABC
with $\overline{AC} \cong \overline{BC}$

$\overline{CD}$ a median to the base

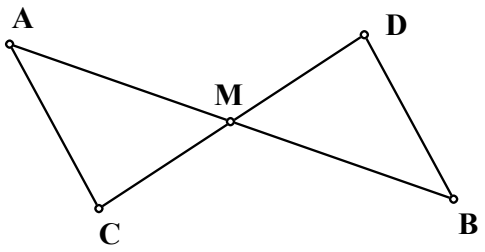
Prove: $\overline{CD}$ is the angle bisector of $\angle ACB$



19. $\overline{AC} \cong \overline{BC}$	19. Given
20. $\overline{CD}$ a median to the base	20. Given
21. D is the midpoint of $\overline{AB}$	21. _____
22. _____	22. Definition of Midpoint
23. $\overline{CD} \cong \overline{CD}$	23. _____
24. $\Delta ADC \cong \Delta BDC$	24. _____
25. $\angle 1 \cong \angle 2$	25. _____
26. $\overline{CD}$ is the angle bisector of $\angle ACB$	26. _____

Given: M is the midpoint of both $\overline{AB}$ and $\overline{CD}$

Prove: $\overline{AC} \cong \overline{BD}$



	Statements	Reasons
27.	M is the midpoint of both $\overline{AB}$ and $\overline{CD}$	27. Given
28.	_____	28. _____
29.	_____	29. _____
30.	_____	30. _____
31.	_____	31. _____

32. Given: $\overline{AB} \cong \overline{DC}$, E is the midpoint of $\overline{AD}$, $\overline{CE} \cong \overline{BE}$
Prove: $\overline{AC} \cong \overline{DB}$