Name:_____ **Geometry Quiz 2.1-2.3**

1. **Write the contrapositive, converse, and inverse for the conditional statement below.**

   If I sail on a boat, then I will get seasick.

   a. **Inverse**_____ (1)

   b. **Contrapositive**_____ (1)

   c. **Converse**_____ (1)

2. **Using the two conditional statements below, write the bi-conditional statement.**
   If it is sunny, then we will go to the beach. If we go to the beach, then it is sunny.

   Bi-conditional_____ (1)

3. **Using the Law of Syllogism, write the statement that follows from the pair of true statements below.**

   If you are a student, then you have lots of homework.
   If you have lots of homework, then you have no social life.

_____ (1)

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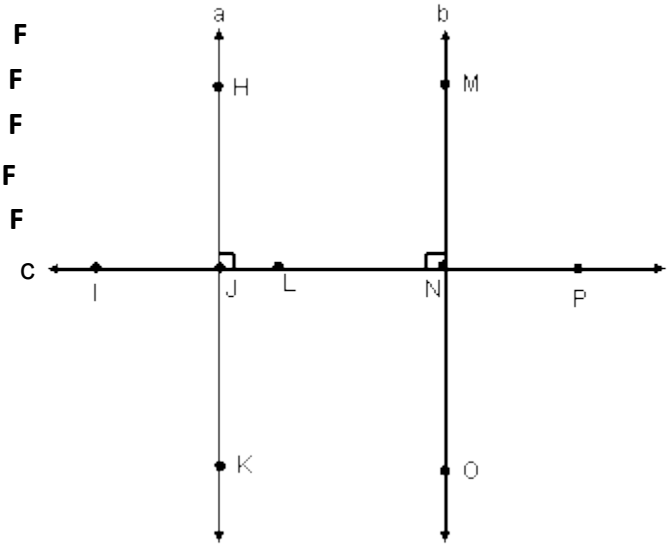
4. What can we can conclude from the statement below?

If Steve does his homework, then Steve gets good grades. If Steve gets good grades, then he gets a new car. Steve does his homework.

_____ ①

5. Use the diagram at the right to answer the following questions.



① **a. Points M, L, and O are collinear T F**

① **b. Points M, L, and O are coplanar T F**

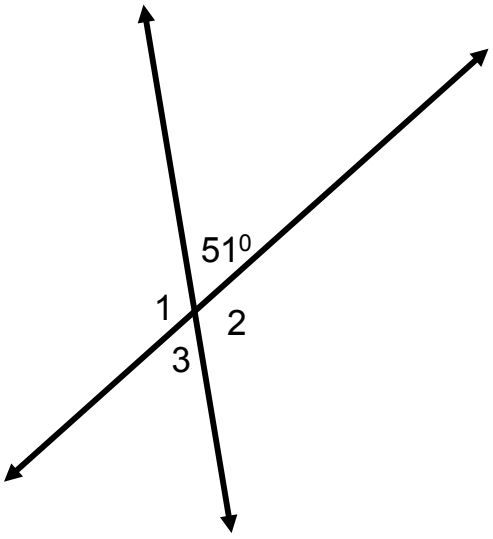
① **c. <HJI and <ONP are supplementary T F**

① **d. <HJI and <LJH form a linear pair T F**

① **e. $\overline{KJ}$ is perpendicular to line c T F**

① **f. <IJK and <MNP are vertical angles T F**

6. Find the missing angle measures.



a. m<1=_____ ①

b. m<2=_____ ①

c. **m<3=_____** ①

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For number 7, what if anything can we conclude from the statements below? If we can conclude something, state what it is and how you arrived at your conclusion. If we cannot conclude something, state why we cannot conclude anything.

7. ***If Eric goes to the store, then he will buy pizza. Eric bought pizza.*** ③ ② ①

Below is a conditional statement. Write the converse to the statement and then give a counterexample showing why it is false.

8. ***If an angle is 45 degrees, then it is acute.*** ② ①

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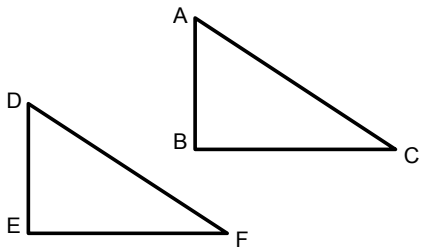
Name:_____ **Chapter 4 Quiz 2**

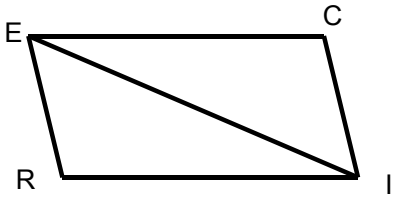
Complete the proof.



1. **Given:** $\bar{A}B \cong \bar{D}E,\ < A \cong < D,\ < C \cong < F$
   Prove: $\Delta ABC \cong \Delta DEF$

⓪ ① ② ③ ④

1.	**1.**
2.	**2.**
3.	**3.**
4.	**4.**



2. **Given:** $\bar{E}R \cong \bar{I}C,\ \bar{E}R || \bar{I}C$
   Prove: $\Delta ERI \cong \Delta ICE$

⓪ ① ② ③ ④ ⑤ ⑥

1.	**1. Given**
2. $\bar{E}R \| \bar{I}C$	**2.**
3.	**3. Reflexive Property**
4. $< REI \cong < CIE$	**4.**
5.	**5.**

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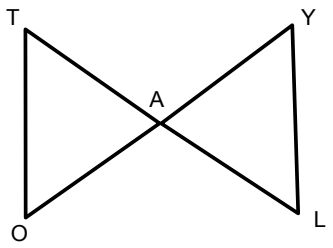
3. Given: $A \text{ is the midpoint of } \bar{T}L, \ < O \cong < Y$

Prove: $< T \cong < L$

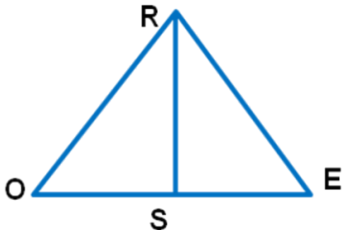


⓪ ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

1.		**1.**
2.		**2.**
3.	$\bar{T}A \cong \bar{A}L$	**3.**
4.		**4. Vertical Angles**
5.	$\Delta TAO \cong \Delta LAY$	**5.**
6.		**6.**

4. Given: $\bar{O}R \cong \bar{E}R, \ \bar{R}S \text{ bisects } \bar{O}E$

Prove: $\Delta ORS \cong \Delta ERS$

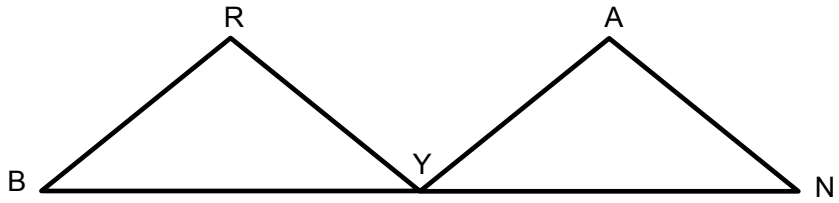


⓪ ① ② ③ ④ ⑤ ⑥

1.		**1. Given**
2.		**2. Given**
3.	$\bar{S}R \cong \bar{S}R$	**3.**
4.		**4. Definition of a bisector**
5.		**5.**

5. Given: Y is the midpoint of $\bar{B}N,\ \bar{B}R||\bar{Y}A,\ <RYB \cong <ANY$

Prove: $\Delta BRY \cong \Delta YAN$

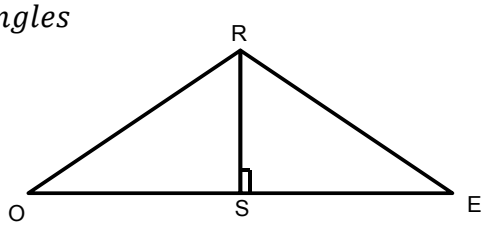


⓪ ① ② ③ ④ ⑤ ⑥ ⑦

1.	**1. Given**
2. $\bar{B}R||\bar{Y}A$	**2.**
3. $<RYB \cong <ANY$	**3.**
4. $\bar{B}Y \cong \bar{Y}N$	**4.**
5.	**5. Corresponding Angles are congruent**
6.	**6.**

6. Given: $\bar{R}O \cong \bar{R}E,\ <RSE\ and <RSO\ are\ right\ angles$

Prove: $\Delta RSO \cong \Delta RSE$



⓪ ① ② ③ ④ ⑤ ⑥ ⑦ ⑧

1.	**1.**
2.	**2.**
3.	**3.**
4.	**4.**

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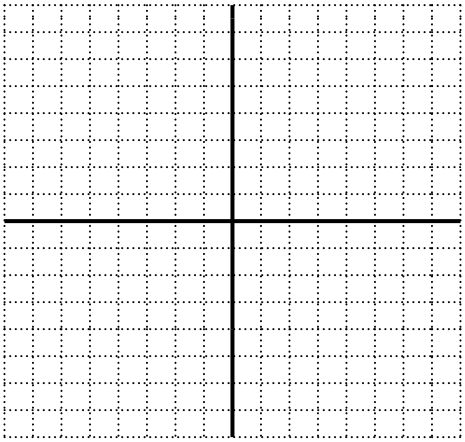
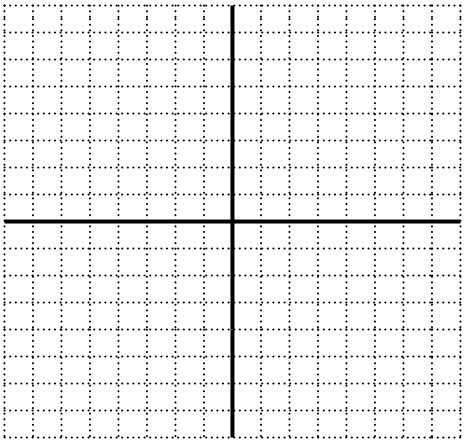
1. **Write the equation of a line parallel to $y = 2x - 4$ and runs through the point $(-2,3)$ Then graph YOUR ANSWER.** ⓪ ① ② ③

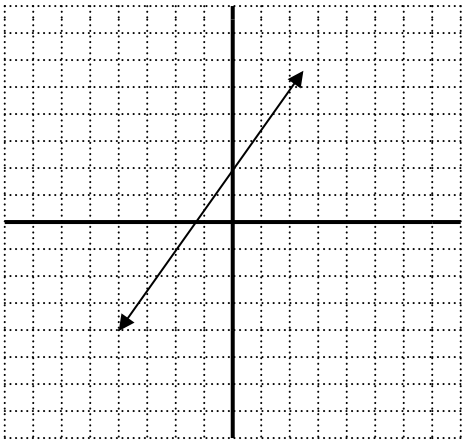


2. **Write the equation of a line perpendicular to $y = -3x + 4$ and runs through the point $(6,2)$. Then graph YOUR ANSWER.** ⓪ ① ② ③



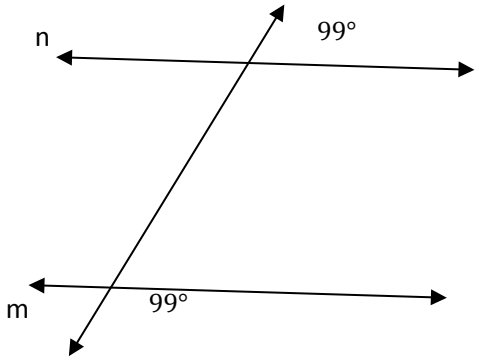
3. **Find the slope of a line that passes through the points** $(-3,5)$ **and** $(4,9)$**.** ⓪ ① ②

4. **Find the slope of the line in the graph to the right.** ⓪ ① ②



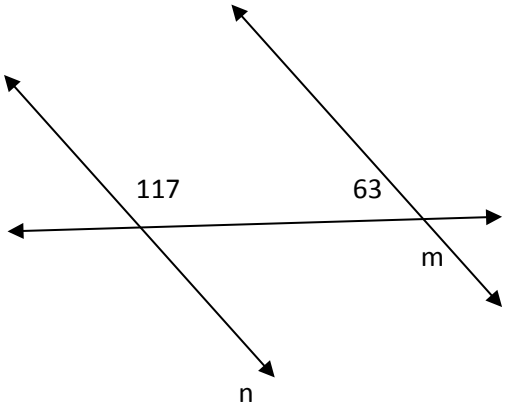
For questions 5-10 state whether m is parallel to n and why.

5.



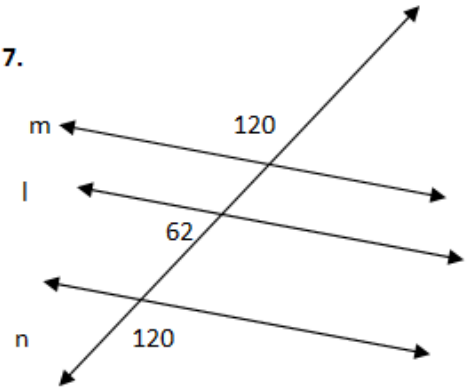
Yes No How? _____ ⓪ ① ②

6.



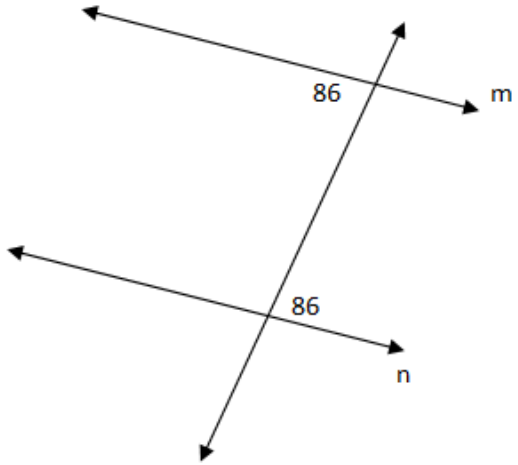
Yes No How?_____ ⓪ ① ②

7.



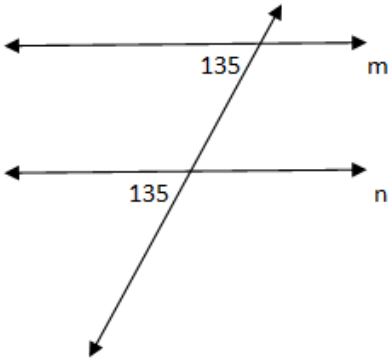
Yes No How?_____ ⓪ ① ②

8.



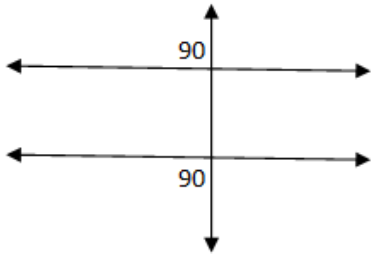
Yes No How?_____ ⓪ ① ②

9.



Yes No How?_____ ⓪ ① ②

10.



Yes No How?____ ⓪ ① ②

For questions 11-13, determine whether the given lines are parallel, perpendicular, or neither.

11. $y = \frac{1}{5}x - 2$ ⓪ ①

$y = 5x - 2$

12. $y = -5x - 5$ ⓪ ①

$y = -5x = 2$

13. $y = 3x - 4$ ⓪ ①

$y = -\frac{1}{3}x + 2$

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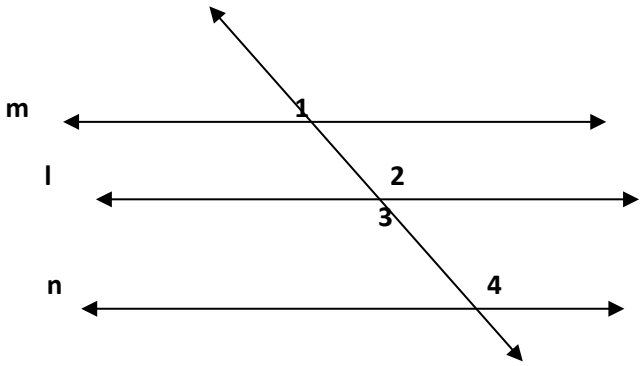
⓪ ① ② ③ ④

Complete the proof.

Given: $< 1 \cong < 3, < 2 \cong, 4$

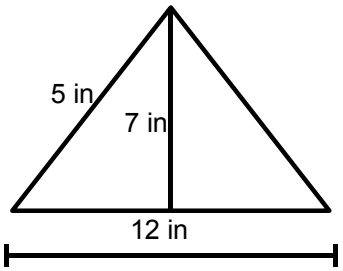
Prove: $m \| n$



Statements	**Reasons**

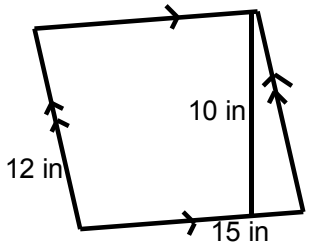
Find the area of the polygon.

1.



Area=_____ 0 1 2

2.

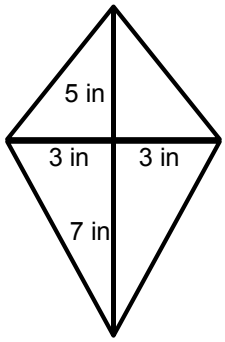


Area=_____ 0 1 2

3.

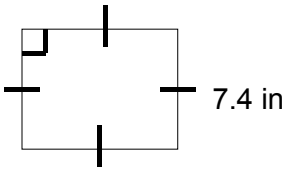
Area=_____ 0 1 2

4.



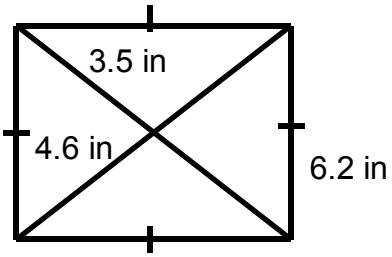
Area= _____ 0 1 2

5.



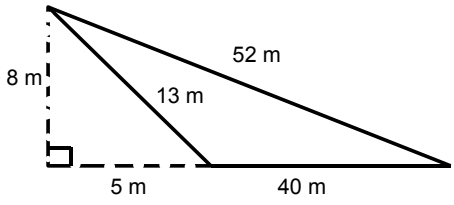
Area=_____ 0 1 2

6.



Area=_____ 0 1 2

7.



Area= _____ 0 1 2

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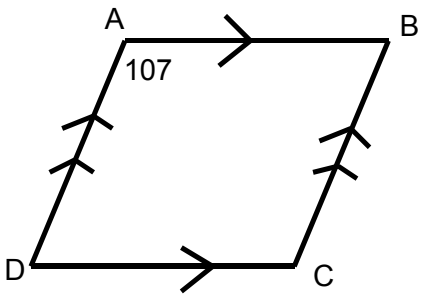
Find the missing angle measure of the figures.

8. m<B=_____

m<C=_____

m<D=_____

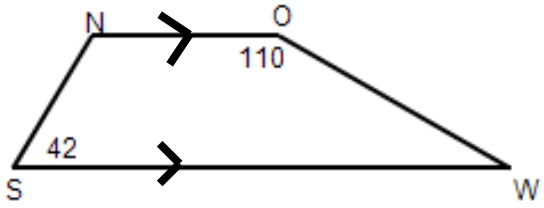
⓪ ① ②



9. m<N=_____

m<W=_____

⓪ ① ②

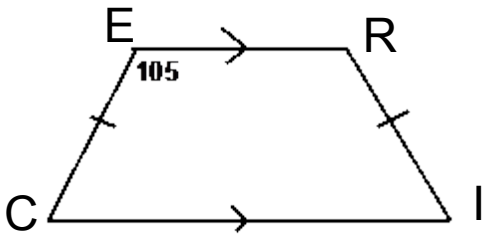


10. m<C=_____

m<R=_____

m<I=_____

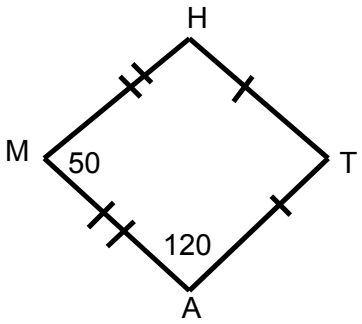
⓪ ① ② ③



11. m<H=_____

m<T=_____

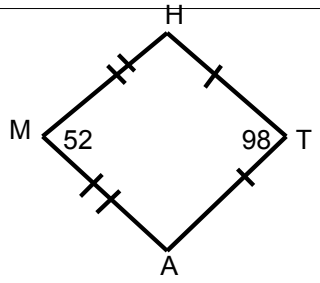
⓪ ① ②



12. m<H=_____

M<A=_____

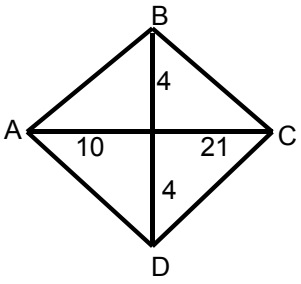
0 1 2



13. AB = _____

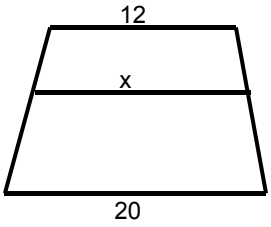
BC = _____

0 1 2

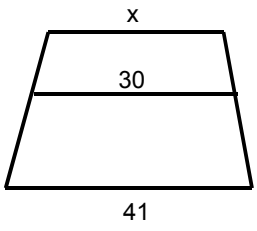


Find the value of x.

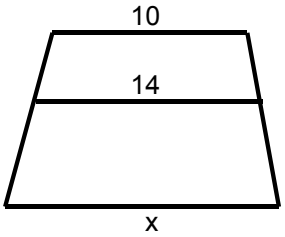
14. _____ 0 1



15. _____ 0 1



16. _____ 0 1



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Answer the following questions YES or NO.

17. A rectangle has all the properties of a parallelogram. Yes No ⓪ ①

18. An isosceles trapezoid has all the properties of a trapezoid. Yes No ⓪ ①

19. A parallelogram is also a square. Yes No ⓪ ①

20. A trapezoid is a parallelogram. Yes No ⓪ ①

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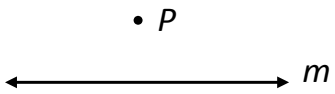
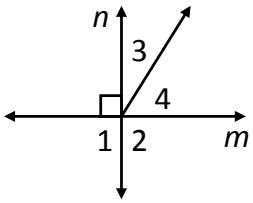
BUBBLE in your best answer. (2pts each)

1. If two lines do not intersect and are not in the same plane, then they must be ___?
   - (A) Parallel
   - (B) Perpendicular
   - (C) Skew
   - (D) Coplanar
2. In the diagram, how many lines can be drawn through point *P* that are parallel to line *m*.
   - (A) 0
   - (B) 1
   - (C) 2
   - (D) 3
   - (E) More than 3



3. Which of the following is *not* true if $n \perp m$?
   - (A) $\angle 1 \cong \angle 2$
   - (B) $m\angle 2 = 90^\circ$
   - (C) $\angle 3$ and $\angle 4$ are supplementary
   - (D) $m\angle 3 + m\angle 4 = 90^\circ$
   - (E) Cannot be determined



4. Which of the following is an equation of a line parallel to $y = 2x + 1$?
   - (A) $y = 2x - 3$
   - (B) $3y - 3 = 2x$
   - (C) $y = \frac{2x+3}{2}$
   - (D) $y = \frac{1}{2}x - 3$
   - (E) $y = x - \frac{2}{3}$
5. Which of the following is an equation of a line perpendicular to $y = x - 1$?
   - (A) $y + 3 = x$
   - (B) $y = x - 3$
   - (C) $2y - 3 = x$
   - (D) $y = -x + 3$
   - (E) $3 = y - x$
6. Find the slope of the line that passes through the points (-2, 0) and (0, 4).
   - (A) ½
   - (B) – 2
   - (C) 4
   - (D) – ½
   - (E) 2

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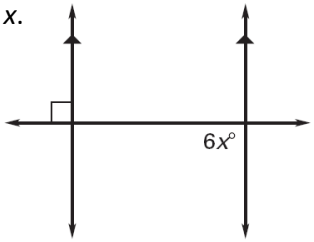
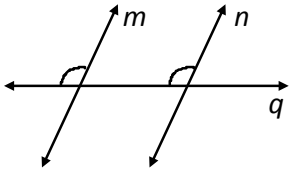
7. Which line passes through the point (0, 3) and has a slope of – ½?
   - (A) $y = -2x - 3$
   - (B) $y = -\frac{1}{2}x + 3$
   - (C) $y = \frac{1}{2}x - 3$
   - (D) $y = -\frac{1}{2}x - \frac{3}{2}$
   - (E) $y = -2x - \frac{3}{2}$

8. In the diagram, find the value of *x*.
   - (A) 24
   - (B) 12
   - (C) 30
   - (D) 90
   - (E) 15

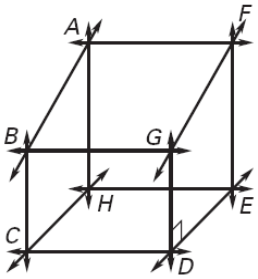


9. State the postulate or theorem you would use to prove that lines *m* and *n* are parallel.
   - (A) Alternate interior angles converse
   - (B) Alternate exterior angles converse
   - (C) Consecutive interior angles converse
   - (D) Corresponding angles converse
   - (E) Vertical angles theorem



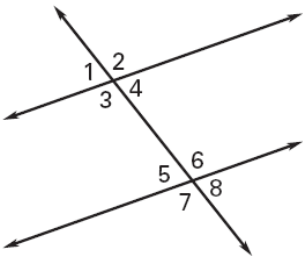
In Exercises 10-13, use the diagram to complete each statement. (1pt each)

10. A line perpendicular to $\overleftrightarrow{DE}$ is _____ (0) (1)
11. A line skew to $\overleftrightarrow{CD}$ is _____ (0) (1)
12. A line parallel to $\overleftrightarrow{BG}$ is _____ (0) (1)
13. Plane *AHC* is parallel to plane _____ (0) (1)



In Exercises 14-17, use the diagram to complete the statement with *corresponding angles*, *alternate interior angles*, *alternate exterior angles*, or *consecutive interior angles*. (1pt each)

14. ∠3 and ∠6 are _____ (0) (1)
15. ∠4 and ∠6 are _____ (0) (1)
16. ∠2 and ∠7 are _____ (0) (1)
17. ∠1 and ∠5 are _____ (0) (1)



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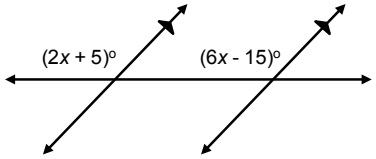
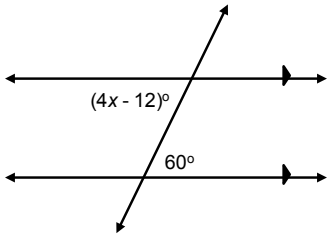
Find the value of *x*. (1pt each)

18. _____ ⓪ ①

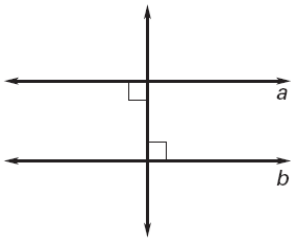


19. _____ ⓪ ①

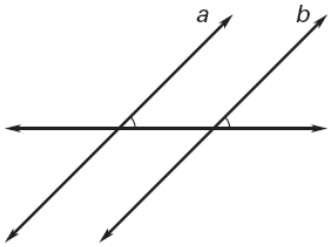


In Exercises 20-21, state the postulate or theorem you would use to prove that lines *a* and *b* are parallel. (2pts each)

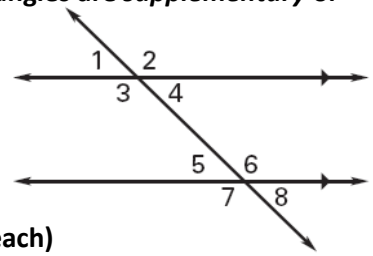
20. _____ ⓪ ① ②



21. _____ ⓪ ① ②



In Exercises 22-23, use the diagram to state whether the given angles are *supplementary* or *congruent*. (1pt each)

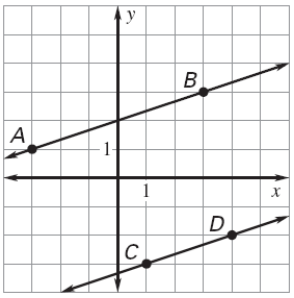


22. ∠3 and ∠6 are _____ ⓪ ①

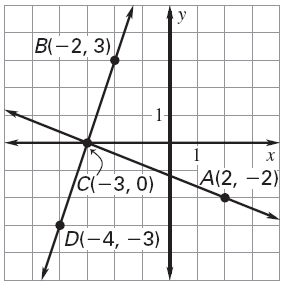
23. ∠2 and ∠6 are _____ ⓪ ①

Decide if the lines are *parallel*, *perpendicular*, or *neither*. (1pt each)

24. _____ ⓪ ①



25. _____ ⓪ ①



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Decide whether the lines with the given equations are *perpendicular*, *parallel*, or *neither*. (1pt each)

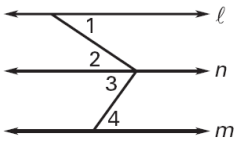
26. $y = x + 5$ _____ 27. $y = \frac{2}{3}x + 2$ _____

$y = -x$ ⓪ ① $y = \frac{3}{2}x + 3$ ⓪ ①

Write a two-column proof. (10pts)

Given: $\angle 1 \cong \angle 2$, $\angle 3 \cong \angle 4$

Prove: $l \parallel m$



28.

	Statements	Reasons
1.	_____	1. Given
2.	$\angle 3 \cong \angle 4$	2. Given
3.	$l \parallel n$	3. _____
4.	$n \parallel m$	4. _____
5.	_____	5. _____

⓪ ① ② ③ ④ ⑤

29. Write an equation of a line with slope $-\frac{1}{4}$ and *y*-intercept 8. _____ ⓪ ①

30. Write an equation of a line *parallel* to $y = -3x + 2$ and passes through the point P (6, -2).

_____

⓪ ① ② ③

31. Write an equation of a line *perpendicular* to $y = \frac{1}{2}x + 3$ and passes through the point P (6, -2).

_____

⓪ ① ② ③

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