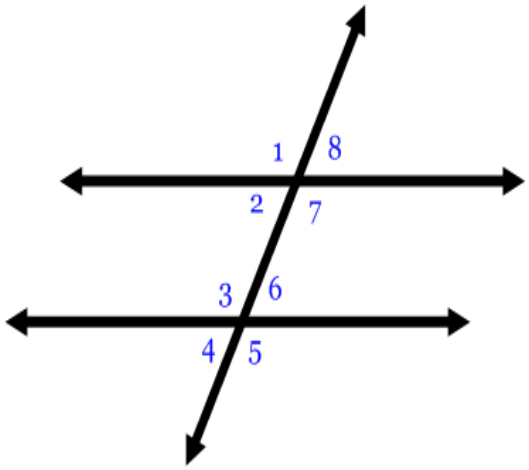
Chapter 3 Practice Test **Name:** _____

Date: _____**Block:** _____

Read all directions. Diagrams are not drawn to scale. Do your best! ☺

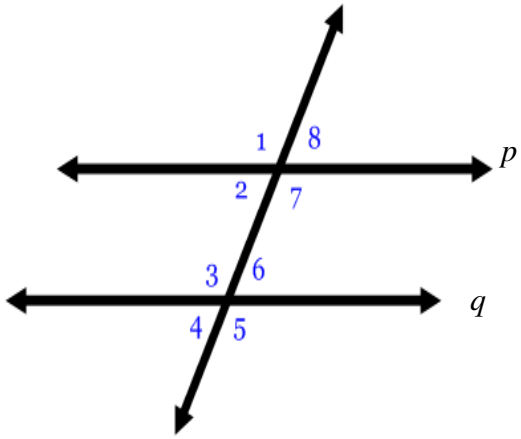
Identify the following pairs of angles as vertical, corresponding, alternate interior, alternate exterior, linear pair or consecutive interior angles (2 points each).

1. ∠1 and ∠3 _____
2. ∠3 and ∠7 _____
3. ∠3 and ∠6 _____
4. ∠1 and ∠8 _____
5. ∠2 and ∠3 _____
6. ∠4 and ∠8 _____
7. ∠2 and ∠4 _____



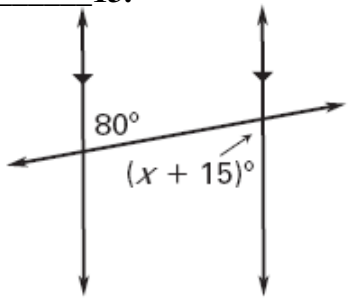
If lines p and q are parallel find the missing angle. Write your answer in the blank (2 points each).

8. If $m\angle 2 = 20$, $m\angle 6 =$ _____.
9. If $m\angle 7 = 150$, $m\angle 6 =$ _____.
10. If $m\angle 1 = 145$, $m\angle 5 =$ _____.
11. If $m\angle 4 = 28$, $m\angle 7 =$ _____.
12. If $m\angle 3 = 125$, $m\angle 8 =$ _____.



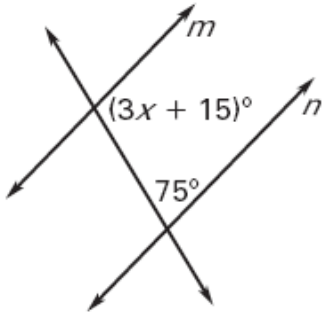
Find the value of x.
Show all work (3 points).

_____**13.**

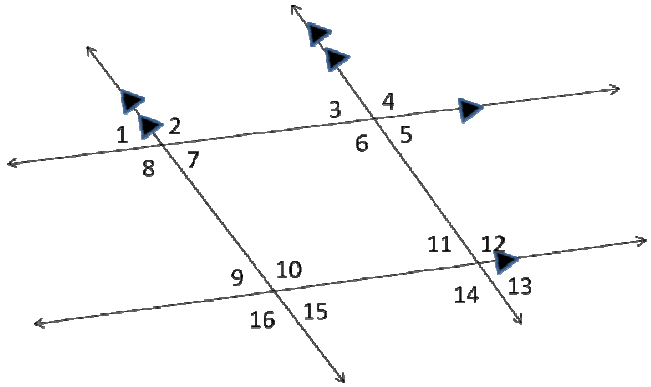


Find the value of x that makes m || n.
Show all work (3 points).

14.



Use the diagram below to fill in the blanks (2 points each).



15. a.) If $m\angle 1 = 25°$, then $m\angle 13 =$ _____

b.) If $m\angle 10 = 145°$, then $m\angle 6 =$ _____

c.) If $m\angle 14 = 120°$, then $m\angle 7 =$ _____

d.) If $m\angle 9 = 25°$, then $m\angle 4 =$ _____

Tell whether the lines through the given points are parallel, perpendicular, or neither. Show all work!! (4 points each)

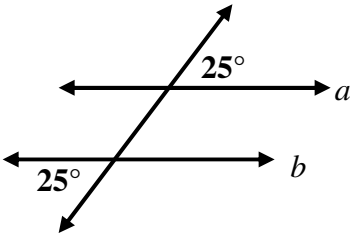
16. Line 1: (-1, 2), (2, 3)
Line 2: (0, 0), (3, 1)

17. Line 3: (0, 1), (1, 3)
Line 4: (4, -1), (5, 2)

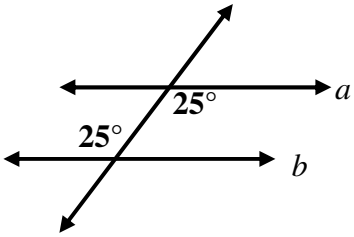
18. Line 5: (-5, 0), (-3, -2)
Line 6: (0, 4), (-2, 2)

Is it possible to prove the lines shown are parallel? If yes, state how you know (postulate/theorem). (3 points each)

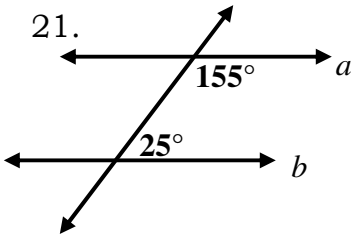
19.



20.



21.



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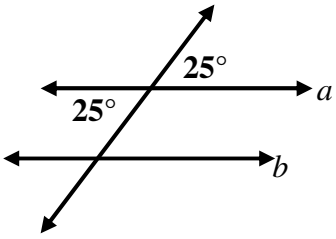

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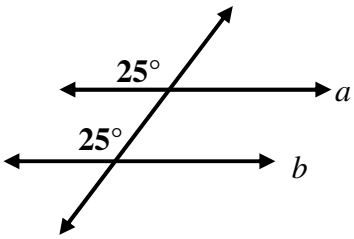

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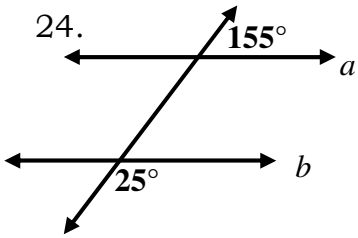
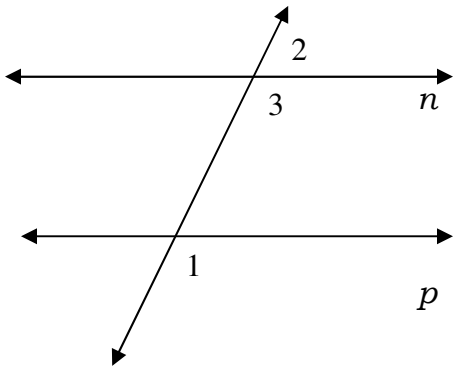


Fill in the blank for each missing statement or reason in the proof (2 points each).

25. Given: $n \parallel p$

Prove: $\angle 1$ and $\angle 2$ are supplementary

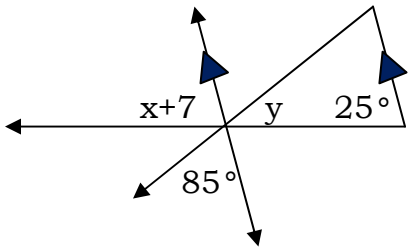


Statements	Reasons
1. $n \parallel p$	1. _____
2. $\angle 1 \cong \angle 3$	2. _____
3. _____	3.Definition of congruent angles
4. $\angle 2$ & $\angle 3$ are a linear pair	4.Definition of linear pair (see diagram)
5. $\angle 2$ & $\angle 3$ are Supplementary	5.Linear Pair Postulate
6. $m\angle 2 + m\angle 3 = 180°$	6._____
7. $m\angle 2 + m\angle 1 = 180°$	7._____
8. _____	8. _____

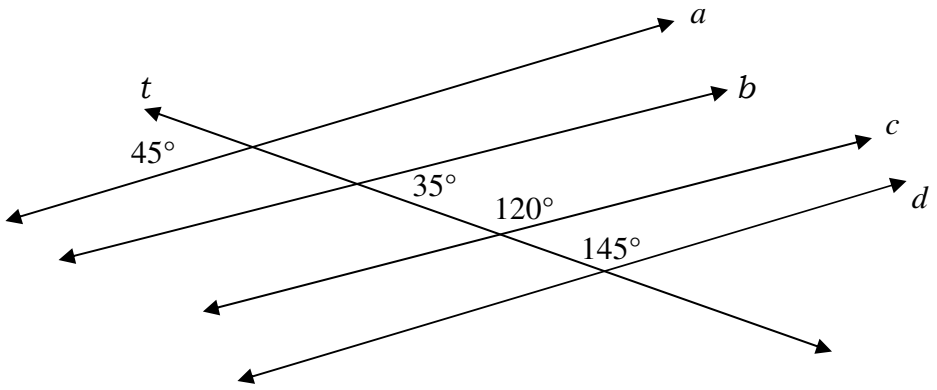
Find the values of x and y. Show all work (2 points each).

26. x=_____

y=_____



_____27. **Which lines are parallel in the diagram?(4 points)**



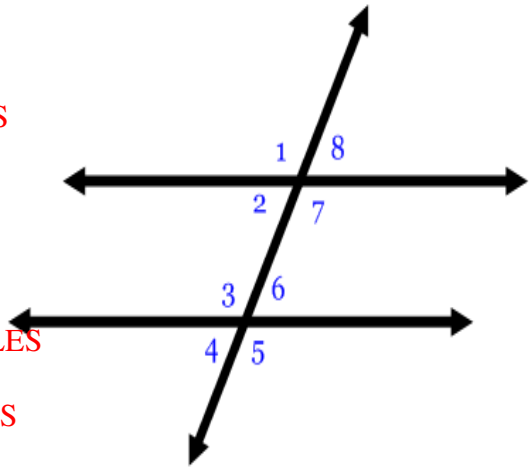
Chapter 3 Practice Test **Name:** _____

Date: _____**Block:** _____

Read all directions. Diagrams are not drawn to scale. Do your best! ☺

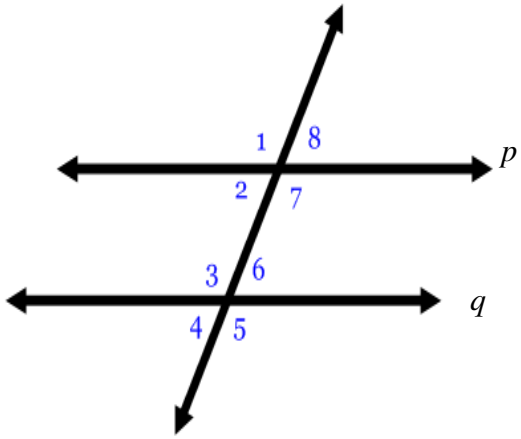
Identify the following pairs of angles as vertical, corresponding, alternate interior, alternate exterior, linear pair or consecutive interior angles (2 points each).

1. ∠1 and ∠3 CORRESPONDING ANGLES
2. ∠3 and ∠7 ALTERNATE INTERIOR ANGLES
3. ∠3 and ∠6 LINEAR PAIR ANGLES
4. ∠1 and ∠8 LINEAR PAIR ANGLES
5. ∠2 and ∠3 CONSECUTIVE INTERIOR ANGLES
6. ∠4 and ∠8 ALTERNATE EXTERIOR ANGLES
7. ∠2 and ∠4 CORRESPONDING ANGLES



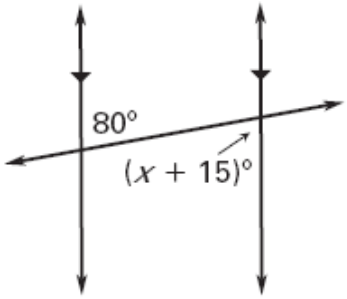
If lines p and q are parallel find the missing angle. Write your answer in the blank (2 points each).

8. If $m\angle 2 = 20$, $m\angle 6 =$ ____20°_____.
9. If $m\angle 7 = 150$, $m\angle 6 =$ ___30°_____.
10. If $m\angle 1 = 145$, $m\angle 5 =$ ___145°_____.
11. If $m\angle 4 = 28$, $m\angle 7 =$ ___152°_____.
12. If $m\angle 3 = 125$, $m\angle 8 =$ _____55°____.



Find the value of x.
Show all work (3 points).

_____**13.**



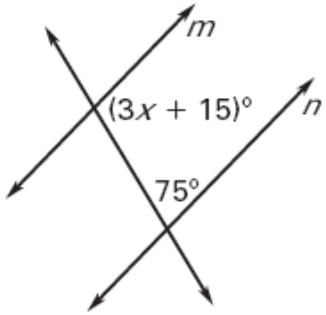
Alt. Interior Angles

80 = X + 15 (2)
65 = X (1)

/30 points

Find the value of x that makes m || n.
Show all work (3 points).

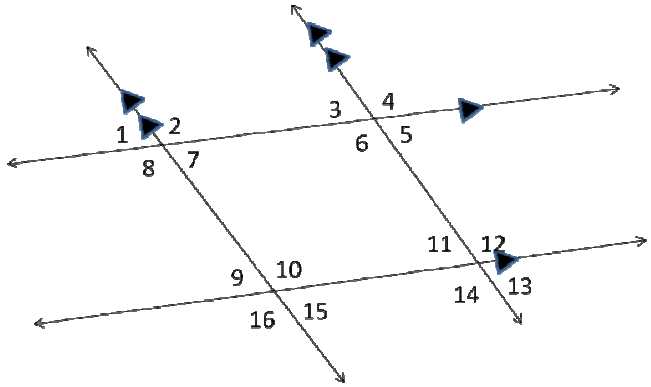
14.



3X + 15 + 75 = 180 (2)
3X + 90 = 180
3X = 90
X = 30 (1)

Here's another approach:
3X + 15 = 105 (2)
3X = 90
X = 30 (1)

Use the diagram below to fill in the blanks (2 points each).



19. a.) If $m\angle 1 = 25°$, then $m\angle 13 =$ _____25°_____

b.) If $m\angle 10 = 145°$, then $m\angle 6 =$ ____145°_____

c.) If $m\angle 14 = 120°$, then $m\angle 7 =$ ____60°_____

d.) If $m\angle 9 = 25°$, then $m\angle 4 =$ ____155°_____

Tell whether the lines through the given points are parallel, perpendicular, or neither. Show all work!! (4 points each – 1 point each slope, 2 points conclusion written in complete sentence.)

TYPOs

20. Line 1: (-1, 2), (2, 3)
Line 2: (0, 0), (3, 1)

$m_1 = \frac{3-2}{2+1} = \frac{1}{3}$

$m_2 = \frac{1-0}{3-0} = \frac{1}{3}$

Since the slopes are equal, Line 1 is parallel to Line 2.

21. Line 3: (0, 1), (1, 3)
Line 4: (4, -1), (5, 2)

$m_3 = \frac{3-1}{1-0} = \frac{2}{1} = 2$

$m_4 = \frac{2+1}{5-4} = \frac{3}{1} = 3$

Line 3 and Line 4 are neither parallel nor perpendicular.

22. Line 5: (-5, 0), (-3, -2)
Line 6: (0, 4), (-2, 2)

$m_5 = \frac{-2-0}{-3+5} = \frac{-2}{2} = -1$

$m_6 = \frac{2-4}{-2-0} = \frac{-2}{-2} = 1$

Since the slopes are negative reciprocals, Line 5 is perpendicular to Line 6.

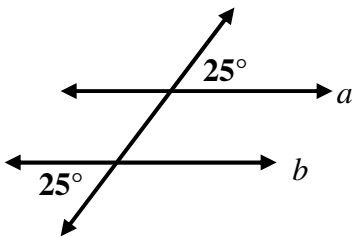
Be sure to identify each line appropriately:

$\frac{3-2}{2+1} = \frac{1}{3}$ OR $m = \frac{3-2}{2+1} = \frac{1}{3}$

DOES NOT EARN CREDIT!!

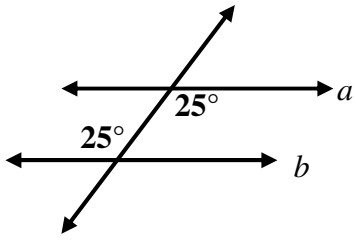
Is it possible to prove the lines shown are parallel? If yes, state how you know (postulate/theorem). (3 points each)

23.



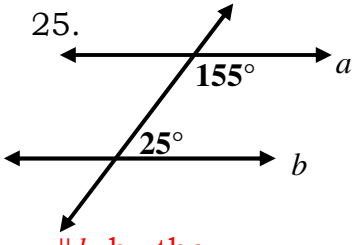
$a \parallel b$ by the Alternate Exterior Angles Converse.

24.

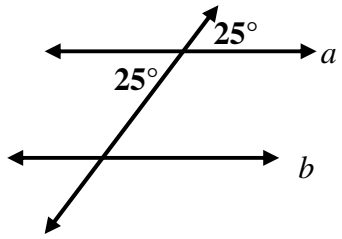


$a \parallel b$ by the Alternate Interior Angles Converse.

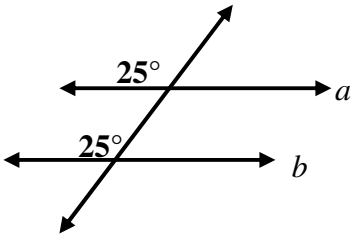
25.



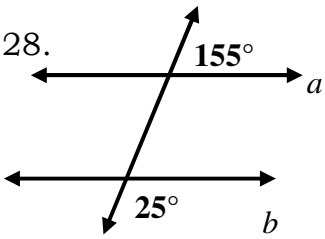
$a \parallel b$ by the Consecutive Interior Angles Converse.

26. 

There is not enough information to determine if the lines are parallel.

27. 

$a \parallel b$ by the Corresponding Angles Converse.

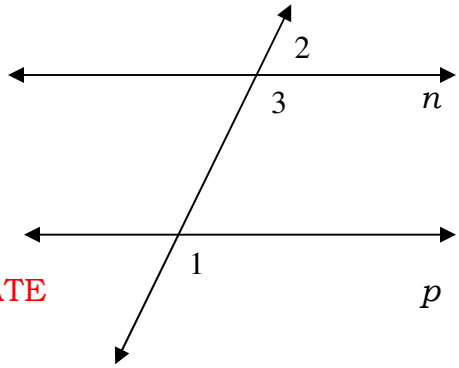
28. 

There is not enough info to determine if the lines are parallel.

/38 points

Fill in the blank for each missing statement or reason in the proof (2 points each).

29. Given: $n \parallel p$
Prove: $\angle 1$ and $\angle 2$ are supplementary



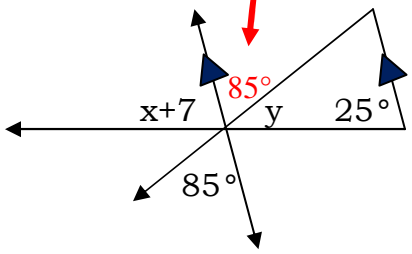
Statements	Reasons
1. $n \parallel p$	1. ____GIVEN_____
2. $\angle 1 \cong \angle 3$	2. CORRESPONDING ANGLES POSTULATE
3. $m\angle 1 = m\angle 3$	3.Definition of congruent angles
4. $\angle 2$ & $\angle 3$ are a linear pair	4.Definition of linear pair (see diagram)
5. $\angle 2$ & $\angle 3$ are Supplementary	5.Linear Pair Postulate
6. $m\angle 2 + m\angle 3 = 180°$	6. DEFINITION OF LINEAR PAIR
7. $m\angle 2 + m\angle 1 = 180°$	7. TRANSITIVE PROPERTY OF EQUALITY

8. $\angle 1$ and $\angle 2$ are supplementary 8. DEFINITION OF SUPPLEMENTARY ANGLES

Find the values of x and y. Show all work (2 points each).

30. x=_____

y=_____



First, identify the vertical angle of 85°.

Second, use the parallel lines to set up the equation:
85 + y + 25 = 180 (1)
Y + 110 = 180
Y = 70 (1)

Third, notice that the (x+7), 85, and y make a straight line. This gives us
X + 7 + 85 + y = 180

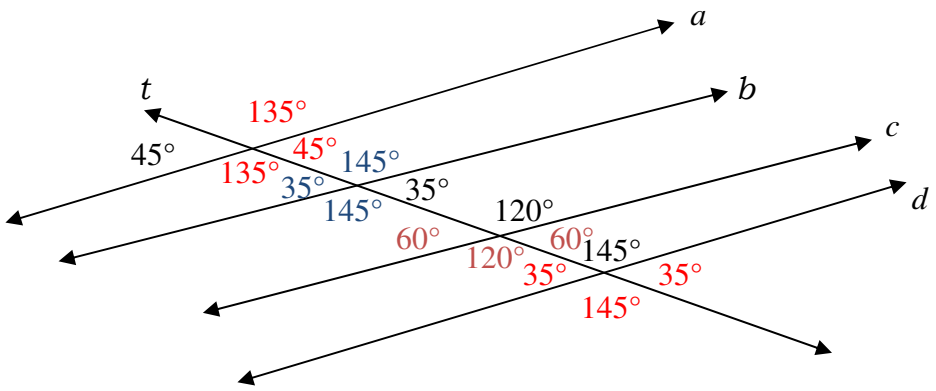
Substituting 70 for y:
X + 7 + 85 + (70) = 180 (1)
X + 162 = 180
X = 18 (1)

Another approach:
You could notice that (x+7) and 25 are corresponding angles and solve this way:

X + 7 = 25 (1)
X = 18 (1)

_____31. **Which lines are parallel in the diagram?(4 points)**

Find the missing angles around each line that is cut by transversal *t*.



Lines *b* and *d* are parallel.

/22 points

ANY CLASS THAT HAS A 'B' AVERAGE OR BETTER ON THE ACTUAL TEST WILL GET A SURPRISE…

Total up your points:

A	73 – 81
B	65 – 72
C	57 – 64
D/F	Less than 57