Geometry – H
Section 3.2 Homework Parallel Lines and Transversals

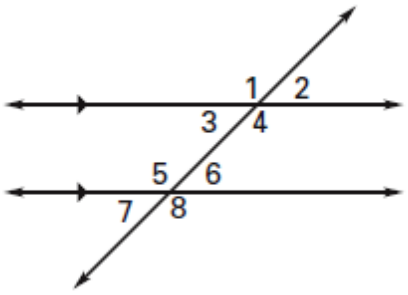
Name: _____
Date: _____ Period: _____

Find the measure of the indicated angle. State the postulate or theorem that justifies your reasoning.

1. If $m\angle 1 = 114°$, then $m\angle 5 =$ _____ by _____.

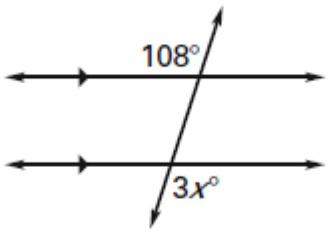
2. If $m\angle 3 = 68°$, then $m\angle 6 =$ _____ by _____.

3. If $m\angle 7 = 64°$, then $m\angle 2 =$ _____ by _____.



Find the value of x.

4.



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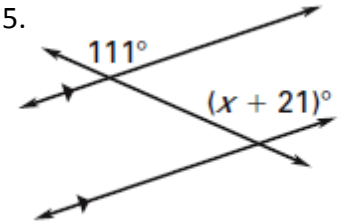

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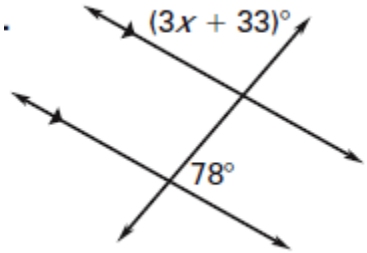

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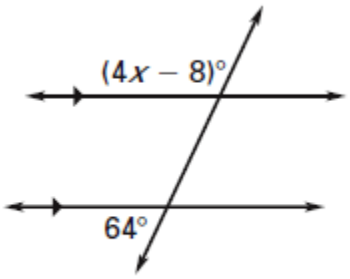
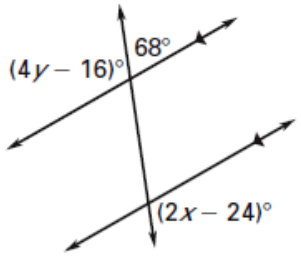


Find the values of x and y.

8.



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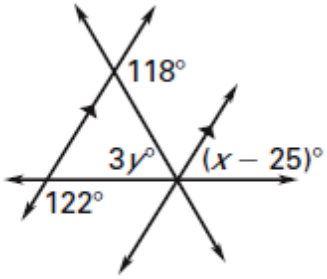

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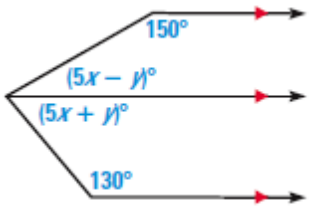
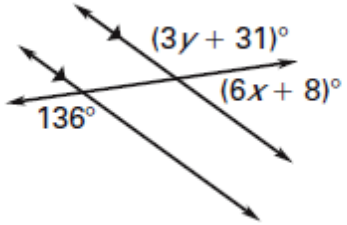
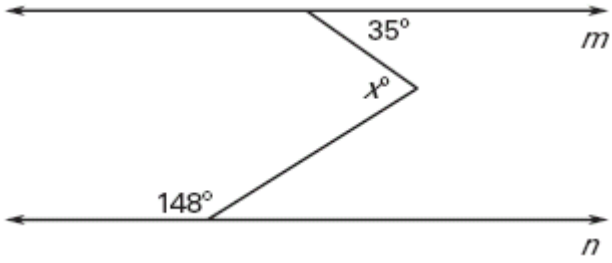


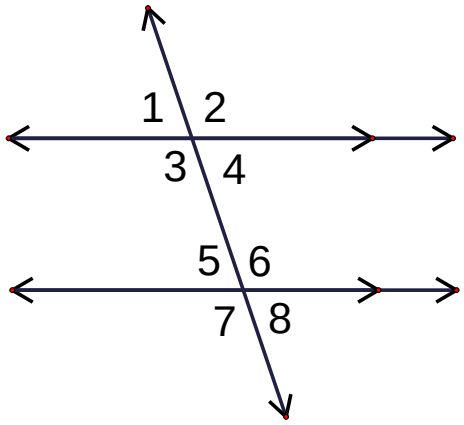
11.



12. In the diagram, $m \parallel n$. Find the value of x. Explain how you obtained your answer.



Given the picture of two parallel lines cut by a transversal, where the angles are labeled 1 – 8 (see diagram below), please solve for x and y.



13. $m\angle 2 = 3(x+y)°$, $m\angle 7 = (4x-9)°$, and $m\angle 8 = 5x°$

14. $m\angle 1 = 4x°$, $m\angle 3 = (6x+y)°$, and $m\angle 7 = (x+5y)°$

Please solve for the possible value(s) of *x*.

15. $m\angle 1 = (x^2 - 2x)°$ and $m\angle 8 = 24°$

16. $m\angle 4 = 2x^2°$ and $m\angle 6 = (3x+160)°$

Answer Key

1. 114° , Corresponding Angles Postulate
2. 68° , Alternate Interior Angles Theorem
3. 64° , Alternate Exterior Angles Theorem
4. x = 36
5. x = 90
6. x = 23
7. x = 31
8. x = 68, y = 32
9. x = 83, y = 20
10. x = 8 , y = 10
11. x = 6, y = 35
12. x = 67
13. x = 21 , y = 4
14. x = 16, y = 20
15. x = 6, x = -4
16. x = -4 , x = 2.5