

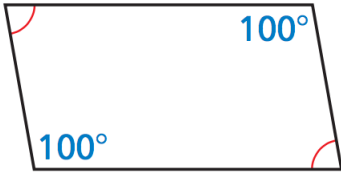
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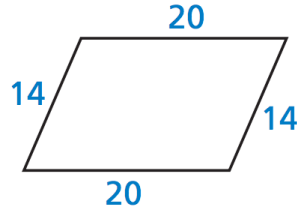
7.3 Proving that a Quadrilateral is a Parallelogram

In Exercises 1–6, state which theorem you can use to show that the quadrilateral is a parallelogram.

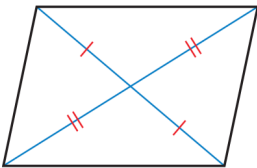
1.



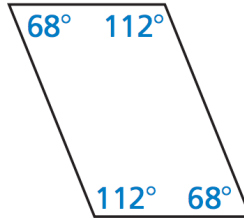
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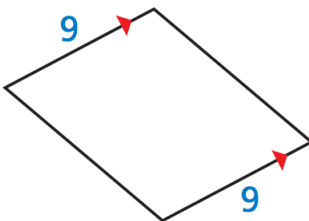
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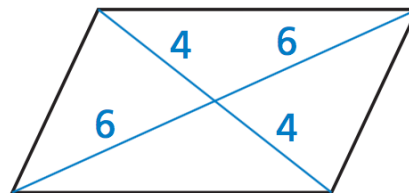
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5.



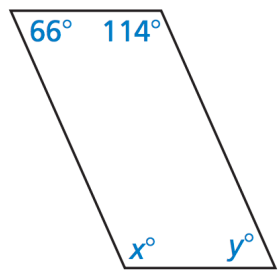
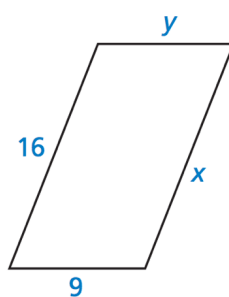
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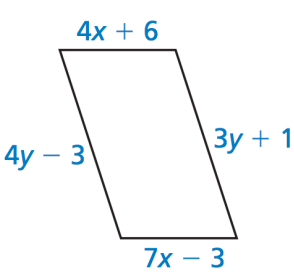
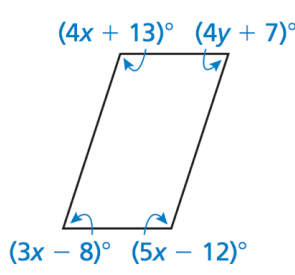


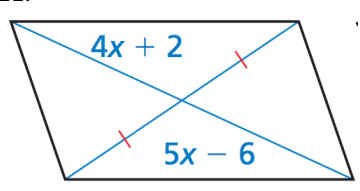
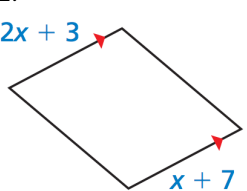
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In Exercises 7–14, find the values of x and y that make the quadrilateral a parallelogram.

<p>7.</p> 	<p>8.</p> 
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<p>9.</p> 	<p>10.</p> 
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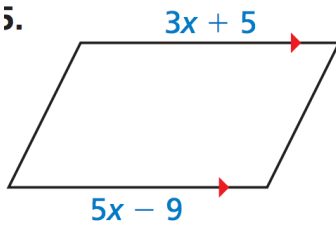
<p>11.</p> 	<p>12.</p> 
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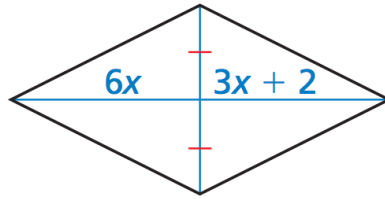
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13.

5.

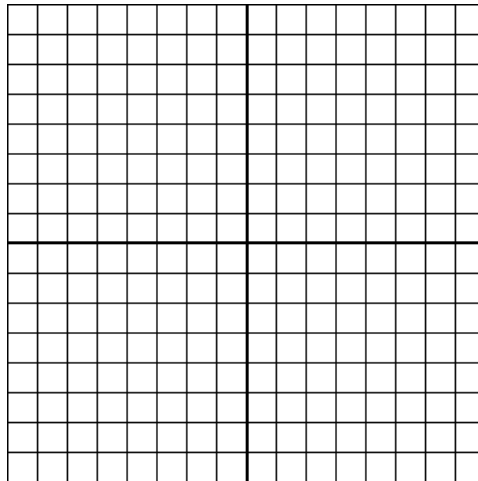


14.



In Exercises 15 & 16, graph the quadrilateral with the given vertices in a coordinate plane. Then show that the quadrilateral is a parallelogram.

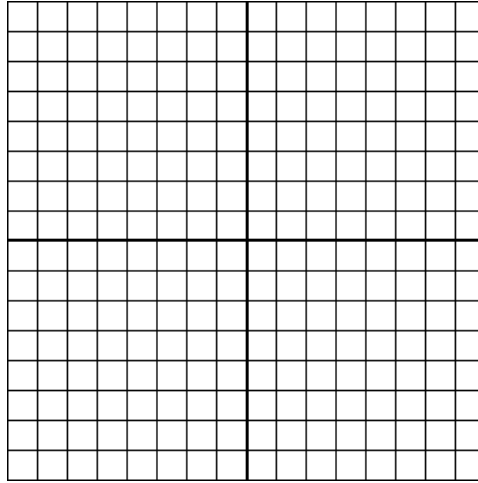
15. $A(0, 1)$, $B(4, 4)$, $C(12, 4)$, $D(8, 1)$



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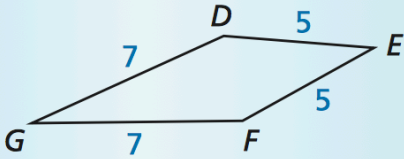
16. $E(-3, 0)$, $F(-3, 4)$, $G(3, -1)$, $H(3, -5)$



In Exercises 17 and 18, describe and correct the error in identifying a parallelogram.


17.

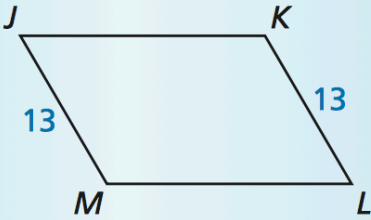




$DEFG$ is a parallelogram by the Parallelogram Opposite Sides Converse (Theorem 7.7).

18.





$JKLM$ is a parallelogram by the Opposite Sides Parallel and Congruent Theorem (Theorem 7.9).