

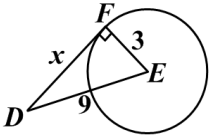
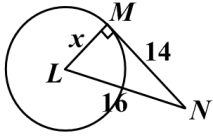
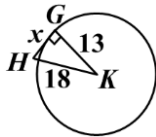
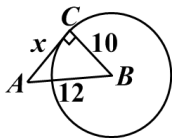
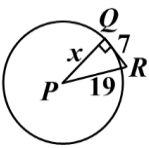
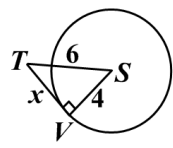
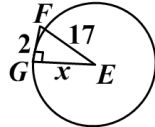
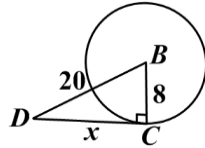
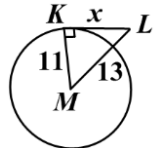
Tangents

Tangents are lines or segments that intersect a circle in exactly one place, forming a right angle with the radius. Depending on what information you are given, there are multiple ways to determine lengths of and on tangent lines. Today, we will be using the Pythagorean Theorem to determine the length of a tangential segment by using the radius length and the distance from the center to the end of the tangent.

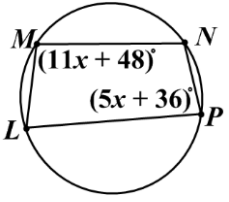
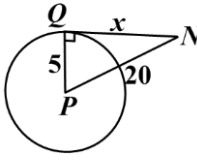
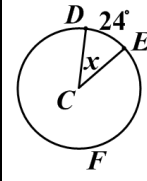
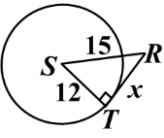
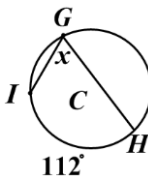
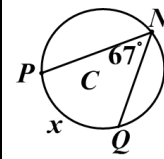
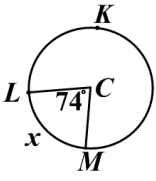
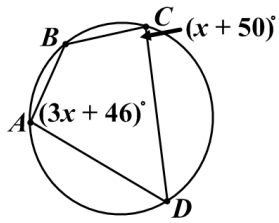
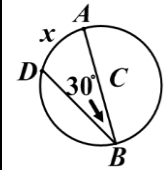
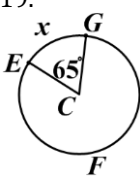
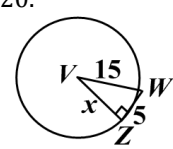
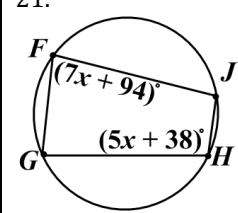
$$a^2 + b^2 = c^2$$

$$(\text{radius})^2 + (\text{tangent})^2 = (\text{hypotenuse})^2$$

Determine the value of x.

<p>1.</p> 	<p>2.</p> 	<p>3.</p> 
<p>4.</p> 	<p>5.</p> 	<p>6.</p> 
<p>7.</p> 	<p>8.</p> 	<p>9.</p> 

Mixed Practice: Determine the value of x .

<p>10.</p> 	<p>11.</p> 	<p>12.</p> 
<p>13.</p> 	<p>14.</p> 	<p>15.</p> 
<p>16.</p> 	<p>17.</p> 	<p>18.</p> 
<p>19.</p> 	<p>20.</p> 	<p>21.</p> 

Solving for Tangent Length Answers

1. $x = 6\sqrt{2}$	2. $x = 2\sqrt{15}$	3. $x = \sqrt{155}$	4. $x = 2\sqrt{11}$	5. $x = 2\sqrt{78}$	6. $x = 2\sqrt{5}$	7. $x = \sqrt{285}$
8. $x = 4\sqrt{21}$	9. $x = 4\sqrt{3}$	10. $x = 6$	11. $x = 5\sqrt{15}$	12. $x = 24^\circ$	13. $x = 9$	14. $x = 56^\circ$
15. $x = 134^\circ$	16. $x = 74^\circ$	17. $x = 21$	18. $x = 60^\circ$	19. $x = 65^\circ$	20. $x = 10\sqrt{2}$	21. $x = 4$