

WS 39 – ANSWERS

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|---|---|
| <p>1. $\angle 1 = 138^\circ$ $\angle 2 = 42^\circ$ $\angle 3 = 138^\circ$
 $\angle 4 = 42^\circ$ $\angle 5 = 90^\circ$ $\angle 6 = 48^\circ$
 $\angle 7 = 42^\circ$ $\angle 8 = 90^\circ$ $\angle 9 = 48^\circ$
 $\angle 10 = 90^\circ$</p> <p>3. $x = 97, y = 96$</p> <p>5. $x = 65, y = 108$</p> <p>7. $x = 31$</p> <p>9. $x = 21, y = 12$</p> <p>11. $x = 5, y = 10$</p> <p>13. $x = 18, y = 20$</p> <p>15. $x = 108, y = 36, z = 30$</p> | <p>2. $\angle 1 = 127^\circ$ $\angle 2 = 53^\circ$ $\angle 3 = 127^\circ$
 $\angle 4 = 37^\circ$ $\angle 5 = 53^\circ$ $\angle 6 = 90^\circ$
 $\angle 7 = 37^\circ$ $\angle 8 = 143^\circ$ $\angle 9 = 37^\circ$
 $\angle 10 = 143^\circ$</p> <p>4. $x = 73, y = 41$</p> <p>6. $x = 30$</p> <p>8. $x = 24.5$</p> <p>10. $x = 16, y = 20$</p> <p>12. $x = 21, y = 60$</p> <p>14. $x = 10, y = 19$</p> <p>16. $x = 90, y = 93, z = 15$</p> |
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$$\begin{aligned} \angle a &= 64^\circ & \angle b &= 116^\circ & \angle c &= 116^\circ \\ \angle d &= 64^\circ & \angle e &= 108^\circ & \angle f &= 72^\circ \\ \angle g_R &= 108^\circ & \angle h &= 72^\circ & \angle i &= 108^\circ \\ \angle j &= 108^\circ & \angle k &= 108^\circ & & \\ \angle m &= 105^\circ & \angle n &= 79^\circ & & \\ \angle p &= 90^\circ & & & & \\ \angle s &= 72^\circ & \angle t &= 119^\circ & \angle g_L &= 116^\circ \end{aligned}$$

Note that there are two angles labeled g so I called one of them $\angle g_R$ for g on the right — you can guess what I called the one on the left. Also note that in this problem you may need to find a few angles that are not labeled. You may also need to use the fact that the angles in a triangle sum to 180° especially to find $\angle g_L$.

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1. If two lines are \perp to the same line, then they are \parallel .
2. If two corresponding angles are \cong , then the lines that form them are \parallel .
3. Transitive property of \parallel lines.
4. If two lines are \perp to the same line, then they are \parallel .
5. If two alternate exterior angles are \cong , then the lines that form them are \parallel .
6. $a \parallel b$ because alternate interior angles are \cong , $c \parallel b$ because of consecutive interior angles are supplementary, and $a \parallel b$ because of the transitive property of \parallel lines.

You need to be able to do problems 1-11 on this worksheet — you need to be able to answer the questions “Are these lines parallel? Why?”

7. $c \parallel d$ alternate exterior angles \cong
8. $a \parallel b$ alternate interior angles \cong
9. $a \parallel b$ corresponding angles \cong
10. $c \parallel d$ consecutive interior angles supplementary
11. $a \parallel b$ $\angle 5 \cong \angle 2$ vertical angles \cong , $\angle 2, \angle 3$ supplementary, so $a \parallel b$ because consecutive inter. supp.
12. $x = 9$
13. $x = 32$
14. $x = 12$

WS 42 – ANSWERS

$$\begin{array}{lll} \angle 1 = 85^\circ & \angle 2 = 95^\circ & \angle 3 = 85^\circ \\ \angle 4 = 57^\circ & \angle 5 = 52^\circ & \angle 6 = 90^\circ \\ \angle 7 = 123^\circ & \angle 8 = 57^\circ & \angle 9 = 38^\circ \end{array}$$

$$\begin{array}{lll} \angle 1 = 62^\circ & \angle 2 = 32^\circ & \angle 3 = 58^\circ \\ \angle 4 = 86^\circ & \angle 5 = 94^\circ & \angle 6 = 86^\circ \\ \angle 7 = 62^\circ & \angle 8 = 118^\circ & \angle 9 = 90^\circ \end{array}$$