1. Classify the following triangles by sides as a scalene triangle, an isosceles triangle, or an equilateral triangle.

<table>
<thead>
<tr>
<th>Scalene Triangles</th>
<th>Equilateral Triangles</th>
<th>Isosceles Triangles</th>
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</table>
2. Classify the following triangles by angles as a right triangle, an isosceles triangle, or an equilateral triangle. Use a protractor to help you classify the triangles.

<table>
<thead>
<tr>
<th>Right Triangles</th>
<th>Equilateral Triangles</th>
<th>Isosceles Triangles</th>
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Lesson 13.2  Measures of Angles of a Triangle

Find the unknown angle measures. The figures are not drawn to scale.

1. \(\triangle ABC\) with \(\angle B = 38^\circ\), \(\angle C = 46^\circ\), and \(\angle A = \text{?}\). Find \(\angle A\).

2. \(\triangle CDE\) with \(\angle C = 39^\circ\), \(\angle D = 115^\circ\), and \(\angle E = \text{?}\). Find \(\angle E\).

3. \(\triangle FGH\) with \(\angle F = 28^\circ\), \(\angle G = 19^\circ\), and \(\angle H = \text{?}\). Find \(\angle H\).

4. \(\triangle DEF\) with \(\angle D = 45^\circ\), \(\angle E = 76^\circ\), and \(\angle F = \text{?}\). Find \(\angle F\).
5. \( m \angle t = \)

6. \( m \angle r = \)

7. \( m \angle y = \)

8. \( m \angle a = \)
Lesson 13.3  Right, Isosceles, and Equilateral Triangles
Find the unknown angle measures in each right triangle. The figures are not drawn to scale.

1.  \(\triangle ABC\) is a right triangle.
   Find the measure of \(\angle ACB\).

2.  \(\triangle PQR\) is a right triangle.
   Find the measure of \(\angle PRQ\).
Find the unknown angle measures. The figures are not drawn to scale.

3. \(ABC\) is a right triangle. 
   Find the measure of \(\angle BCD\).

![Diagram of triangle ABC]

4. \(EBD\) is an isosceles triangle with \(ED = EB\), \(m\angle BEC = 34^\circ\), and \(m\angle CBD = 44^\circ\). 
   Find the measure of \(\angle EBC\).

![Diagram of triangle EBD]
Find the unknown angle measures in each figure. The figures are not drawn to scale.

5. \( \triangle AOB \) is an isosceles triangle. \( OA = OB \).
   \( \angle AOC \) is a right triangle.
   Find the measure of \( \angle OCB \)

\[ \begin{array}{c}
\text{O} \\
\text{C} \quad B \quad A
\end{array} \]

6. \( \triangle ABC \) is an equilateral triangle and \( \triangle ACD \) is an isosceles triangle.
   Find the measure of \( \angle ADC \).

\[ \begin{array}{c}
\text{A} \\
\text{B} \quad C \quad D
\end{array} \]
7. \(ABCDEF\) is a 6-sided figure. All the triangles are equilateral triangles. Find the measure of \(\angle FAB\).

8. \(ABC\) is an equilateral triangle. \(BA = BD\). Find the measure of \(\angle AEC\).
Lesson 13.4  Triangle Inequalities

Complete. Measure the sides of the triangle to the nearest inch.

1. $PQ = \underline{\text{in.}}$  $QR = \underline{\text{in.}}$  $PR = \underline{\text{in.}}$

2. $PQ + QR = \underline{\text{in.}}$

3. $PQ + PR = \underline{\text{in.}}$

4. $PR + QR = \underline{\text{in.}}$

Use your answers in Exercises 1 to 4. Fill in the blanks with Yes or No.

5. Is $PQ + QR > PR$?  \underline{\text{Yes/No}}

6. Is $PQ + PR > QR$?  \underline{\text{Yes/No}}

7. Is $PR + QR > PQ$?  \underline{\text{Yes/No}}
Complete. Measure the sides of the triangle to the nearest centimeter.

8. \( BC = \_\_\_\_\_ \) cm \( AB = \_\_\_\_\_ \) cm \( AC = \_\_\_\_\_ \) cm

9. \( AB + BC = \_\_\_\_\_ \) cm

10. \( AB + AC = \_\_\_\_\_ \) cm

11. \( BC + AC = \_\_\_\_\_ \) cm

Use your answers in Exercises 8 to 11. Write the sides of the triangle to make the inequalities true.

12. \( AB + BC > \) ________

13. \( AB + AC > \) ________

14. \( BC + AC > \) ________
The lengths of two sides of each triangle are given. Name a possible length for the third side. The given lengths are in whole centimeters or inches.

15.

In triangle $XYZ$, the length of $ZY$ is greater than 2 inches. A possible length of $ZY$, rounded to the nearest inch, is ________.

16.

In triangle $EFG$, the length of $EG$ is greater than 4 centimeters. A possible length of $EG$, rounded to the nearest centimeter, is ________. 
The lengths of two sides of each triangle are given. Name a possible length for the third side. The given lengths are in whole centimeters or whole inches.

17. In triangle $STU$, the length of $UT$ is less than 10 centimeters. A possible length of $UT$, rounded to the nearest centimeter, is $\underline{9}$.

18. In triangle $PQR$, the length of $RQ$ is greater than 3 inches. The possible length of $RQ$, rounded to the nearest inch, is $\underline{4}$. 

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Lesson 13.5  Parallelogram, Rhombus, and Trapezoid

Find the unknown angle measures. The figures are not drawn to scale.

1.  \(DEFG\) is a parallelogram and \(GF = GH\).
Find the measure of \(\angle y\).

\[\begin{array}{c}
\text{D} \\
\text{H} \\
\text{E} \\
\text{F} \\
\text{G} \\
\text{y}
\end{array}\]

2.  \(PQRS\) is a parallelogram and \(RST\) is a right triangle.
Find the measures of \(\angle PSR\) and \(\angle RST\).

\[\begin{array}{c}
\text{P} \\
\text{Q} \\
\text{R} \\
\text{S} \\
\text{T}
\end{array}\]
3. \(ABCD\) and \(ADEF\) are parallelograms. Find the measure of \(\angle EDC\).

4. \(PQRS\) is a rhombus and \(PR = TR\). Find the measure of \(\angle PQR\).
5. \(WXYZ\) is a rhombus and \(WV\) is a line segment. Find the measure of \(\angle VYZ\).

\[
\begin{align*}
W & \quad X \\
128^\circ & \quad Y \\
Z & \quad V
\end{align*}
\]

6. \(ABCD\) is a rhombus. \(AE\) is a line segment. Find the measure of \(\angle x\).

\[
\begin{align*}
A & \quad F \\
108^\circ & \quad D \\
64^\circ & \quad E \\
B & \quad C
\end{align*}
\]
7. \(PQRS\) is trapezoid and \(\overline{SR} \parallel \overline{PQ}\).
\(SR = PR\). Find the measure of \(\angle PRQ\).

8. \(ABCD\) is a trapezoid. \(\overline{AB} \parallel \overline{DC}\) and \(CB = CD\).
\(FE\) is a line. Find the measure of \(\angle BAD\).
Put on Your Thinking Cap!

The figures are not drawn to scale. Find the unknown angle measures.

1. \( \text{PQRS and STUV are parallelograms and } PT = PU. \)
   Find the measure of \( \angle RSV. \)

\[ \begin{align*}
\text{Q} & \quad \text{R} \\
\text{U} & \quad \text{V} \\
\text{P} & \quad \text{T} \\
\text{S} & \\
\end{align*} \]

\[ \angle RSV = 118° \]

2. \( \text{PQRS is a parallelogram and } ST = SP. \)
   Find the measure of \( \angle a. \)

\[ \begin{align*}
\text{R} & \quad \text{Q} \\
\text{S} & \quad \text{T} \\
\text{P} & \\
\end{align*} \]

\[ \angle a = 106° \]
3. \(ABCD\) is a square and \(AEDF\) is a rhombus. Find the measure of \(\angle CDE\).

4. \(BDEG\) is a trapezoid and \(GF \parallel BC\). \(ABC\) and \(AEF\) are isosceles triangles. Find the measures of \(\angle x\) and \(\angle y\).
5. In the figure, $PS = PR = RQ$ and the measure of $\angle STP$ is twice the measure of $\angle TPS$. Find the measures of $\angle x$ and $\angle y$.

6. $ABC$ is an equilateral triangle. $CEF$ is an isosceles triangle, where $FC = FE$, $m\angle CED = 54^\circ$, and $m\angle CFE = 118^\circ$. Find the measures of $\angle x$ and $\angle y$. 
7. \(ABCD\) is a rectangle. \(FA = FE\) and \(FB = FG\). Find the measures of \(\angle x\) and \(\angle y\).

8. \(ABC\) is a right triangle, \(\overline{BG}\) is a line segment, and \(m\angle ABC = m\angle CDE\). \(m\angle ACB = 90°\) and \(AB \parallel DE\). Find the measures of \(\angle x\) and \(\angle y\).