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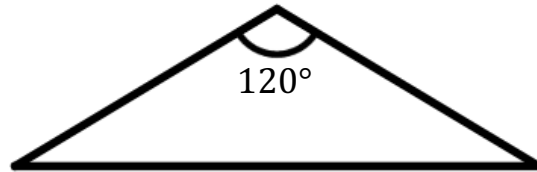
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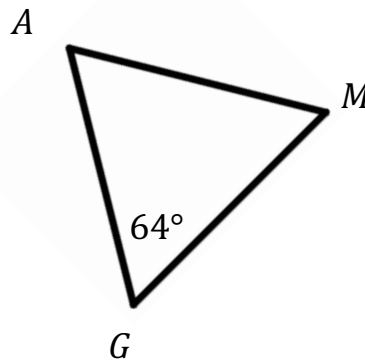
Triangles – Part 1
Base Angle of Isosceles Triangles
Independent Practice

1. Consider the triangle below.

   120°

   Determine the angle measure for the bottom two angles in order for the triangle to be classified as an isosceles triangle.
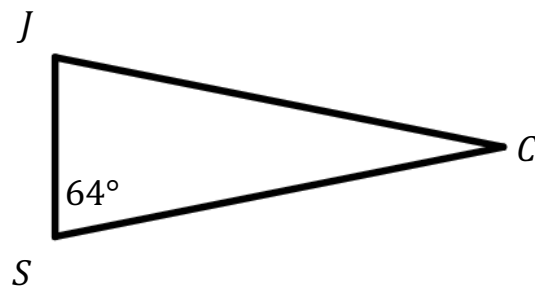
2. Consider the triangle below.

   A

   M

   64°

   G

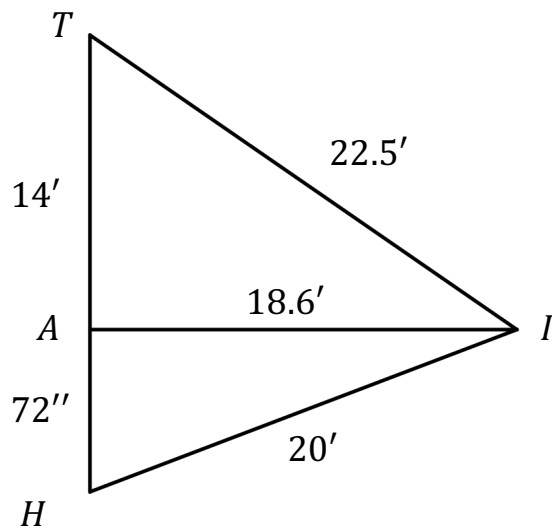   Determine the angle measure for ∠*A* and ∠*M* in order for Δ*GAM* to be classified as an isosceles triangle.

3. Determine the measures of ∠N and ∠O in ΔNOR below. List the degree measures from smallest to largest.

O

R

N
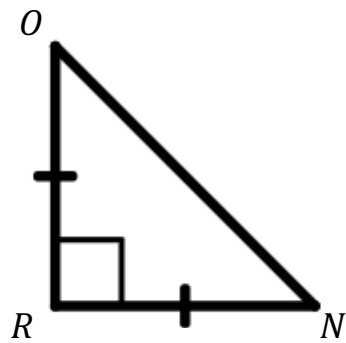
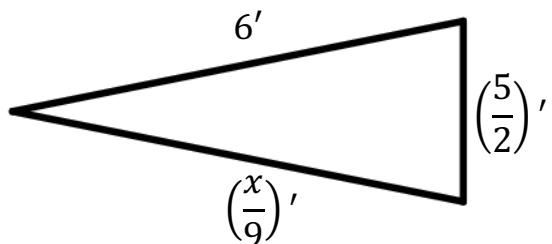4. Determine the angle measure of the missing angles of ΔJCS below if ΔJCS is an isosceles triangle.

J

64°

S

C

5. Identify the isosceles triangle below along with the base angles.

```
        T
        |\
        | \
   14'  |  \  22.5'
        |   \
        |    \
      A |_____\  I
        | 18.6' 
   72"  |    /
        |   /  20'
        |  /
        | /
        |/
        H
```

6. Determine the value of x for the following isosceles triangle.

```
          6'
      _____
      \        |
       \       | $\left(\frac{5}{2}\right)'$
        \      |
         \_____|
    $\left(\frac{x}{9}\right)'$
```

7. Complete the two – column proof below with the word bank provided.

Given: Figure GOALR is equilateral and equiangular.

Prove: $\triangle YLA$ is an isosceles triangle.
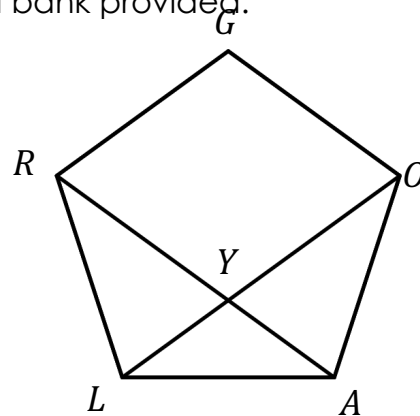
A. Equilateral figures have congruent sides

B. Isosceles Triangle Definition

C. Reflexive Property

D. Side – Angle – Side

E. Corresponding Parts of Corresponding Triangles are Congruent.

F. An equiangular figure has all angles that are congruent

G. Transitive Property

H. Base Angle Theorem

I. Angle – Angle – Side

J. Angle Addition Postulate.

Statement	Reasons
1. GOALR is equilateral and equiangular.	1. Given
2. $\overline{RL} \cong \overline{OA}$	2.
3. $\overline{LA} \cong \overline{LA}$	3.
4. $\angle RLA \cong \angle OAL$	4.
5. $\triangle RLA \cong \triangle OAL$	5.
6. $\angle YLA \cong \angle YAL$	6.
7. $\overline{YL} \cong \overline{YA}$	7.
8. $\triangle YLA$	8.