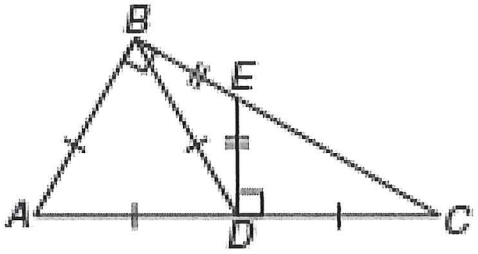
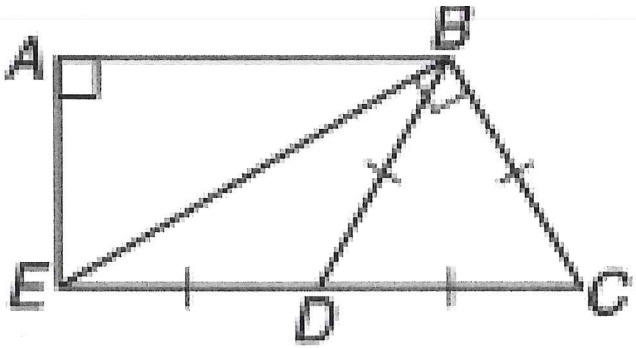
Answer Key

Isosceles and Equilateral Triangles Practice (Day 2)

1. Answer: True or False.

a) ΔABC is a right triangle TRUE
b) ΔBED is an obtuse triangle TRUE
c) ΔBED is equilateral False
d) ΔEDC is a right triangle TRUE
e) <ABC is 90 degrees TRUE



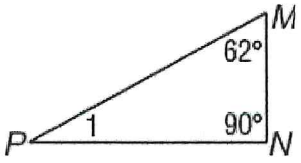


2. Answer: True or False.

a) ΔABE is a right triangle True
b) ΔBED is an obtuse triangle TRUE
c) ΔBED is isosceles TRUE
d) ΔEBC is a right triangle TRUE
e) <DBC is 90 degrees False.
f) ΔBDC is equilateral TRUE
g) <D is the vertex angle of ΔEDB TRUE
h) <C is 60 degrees TRUE

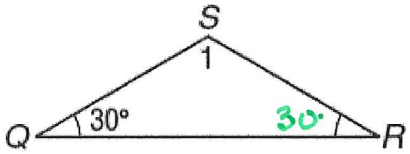
Use the Triangle Sum Theorem to find the numbered angles listed below each figure.

1.



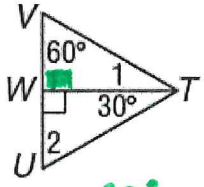
<1= 28°

2.



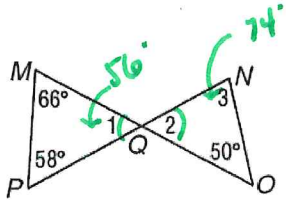
m<1= 120°

3.



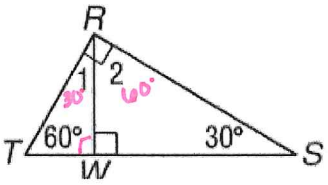
m<1= 30°
m<2= 60°

4.



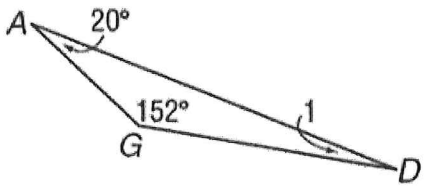
m<1= 56°
m<2= 56°
m<3= 74°

5.



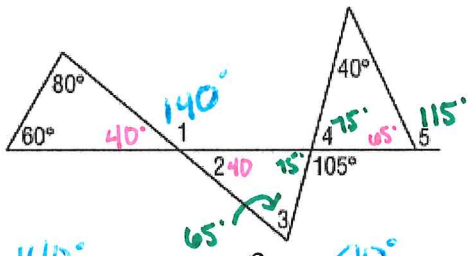
m<1= 30°
<2 = 60°

6.



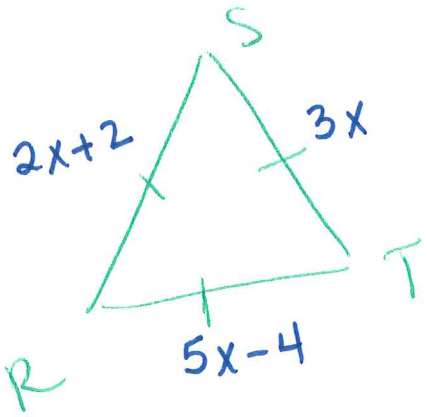
m<1= 8°

7.



m<1= 140°
m<3= 65°
m<5 = 115°
m<2 = 40°
m< 4= 75°

8. Find the measure of each side of equilateral triangle RST with RS = 2x + 2, ST = 3x and TR = 5x – 4.



$ST = RS$

$3x = 2x + 2$

$-2x \quad -2x$

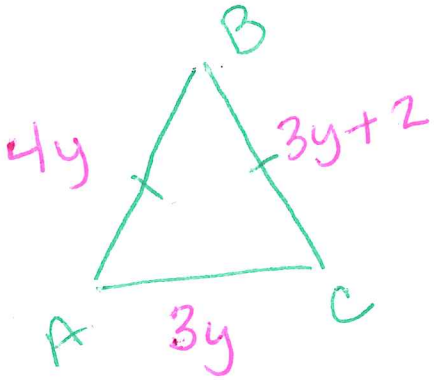
$\boxed{x = 2}$

$\boxed{RS = 6}$

$\boxed{ST = 6}$

$\boxed{TR = 6}$

9. Find the measure of each side of isosceles triangle ABC with vertex angle <B, if AB = 4y, BC = 3y + 2, and AC = 3y.



$AB = BC$

$4y = 3y + 2$

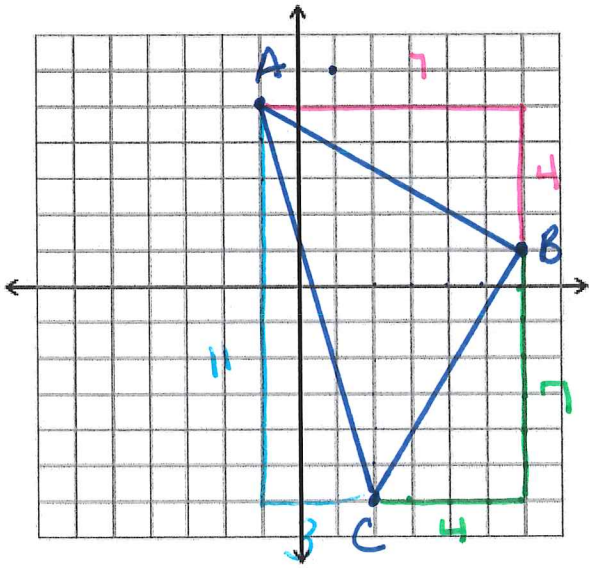
$\boxed{y = 2}$

$\boxed{AB = 8}$

$\boxed{BC = 8}$

$\boxed{AC = 6}$

10. Find the measure of each side of $\triangle ABC$ with vertices $A(-1, 5)$, $B(6, 1)$, and $C(2, -6)$. Classify the triangle.



$7^2 + 4^2 = AB^2$

$49 + 16 = AB^2$

$\boxed{\sqrt{65} = AB}$

$11^2 + 3^2 = AC^2$

$121 + 9 = AC^2$

$\boxed{\sqrt{130} = AC}$

$7^2 + 4^2 = BC^2$

$\boxed{\sqrt{65} = BC}$

$AB = BC$ ∴ $\triangle ABC$ is an isosceles $\triangle$ because of the $2 \cong$ sides