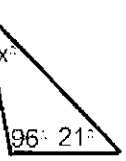
Geometry
Guided Notes – Triangle Angles

Name: _____
Date: _____

The sum of the measures of the interior angles of a triangle is 180°.

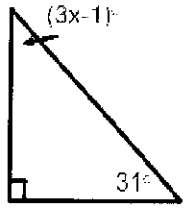
Find the value of x in each figure.

1. x = 63



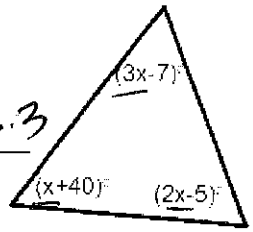
$x+96+21=180$
$x=63$

2. x = 20



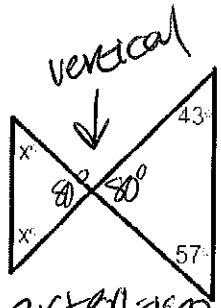
$90+31+3x-1=180$
$3x+120=180$
$3x=60$

3. x = 25.3



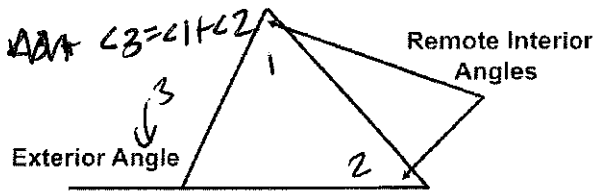
$6x+20=180$
$x=25.3$

4. x = 50



$2x+80=180$
$x=50°$

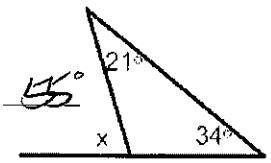
The measure of an exterior angle of a triangle is equal to the sum of the remote interior angles.



* All ext ∠'s = 360°

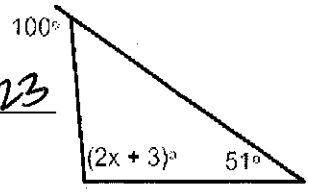
Find the value of x in each figure.

5. x = 55°



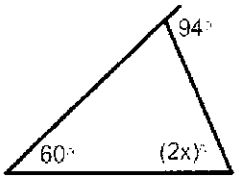
$x=21+34$
$x=55°$

6. x = 23



$100=2x+3+51$
$100=2x+54$
$x=23$

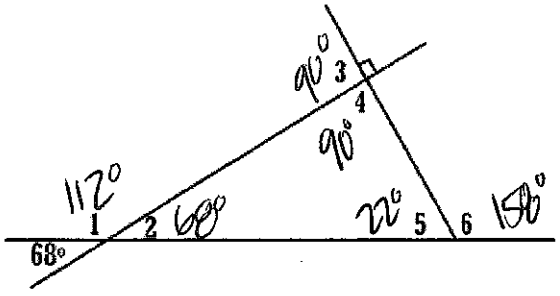
7. x = 17



$60+2x=94$
$x=17$

Find the value of each numbered angle.

8. m∠1 = 112°
9. m∠2 = 68°
10. m∠3 = 90°
11. m∠4 = 90°
12. m∠5 = 22°
13. m∠6 = 158°



Isosceles Triangles & Base Angles

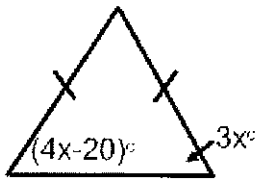
If two *sides* of a triangle are congruent, then the sides opposite those sides are congruent

If two *angles* of a triangle are congruent, then the sides opposite those angles are congruent.

Find the value of x in each figure.

14.

x = 20°



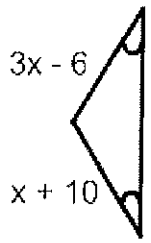
$4x-20=3x$

$-20=-x$

$x=20°$

15.

x = 8



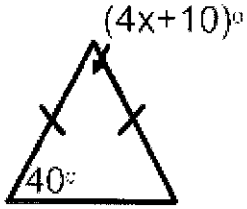
$3x-6=x+10$

$2x=16$

$x=8$

16.

x = 22.5°



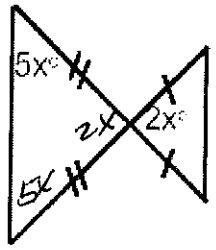
$4x+10=100$

$4x=90$

$x=22.5$

17.

x = 15



$12x=180$

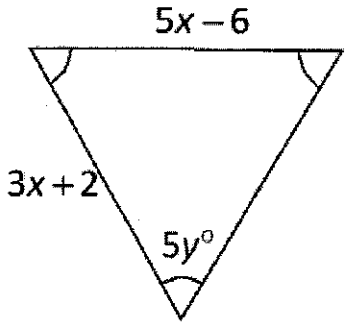
$x=15$

Equilateral Triangles: Three sides of ~~and~~ any equilateral triangle are congruent.

Three angles of any equilateral triangle all measure 60 degrees.

Find the value of each missing variable in each figure.

18.



$3x+2=5x-6$

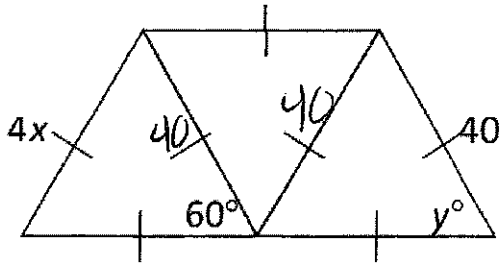
$-2x=-8$

$x=4$

$5y=60$

$y=12$

19.



$4x=40$

$x=10$

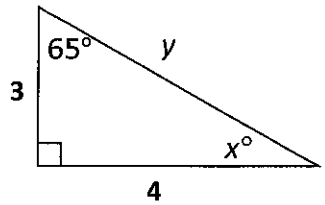
$y=60$

Isosceles and Equilateral Triangles Worksheet

NAME:_____

Find the value of x and y

1)

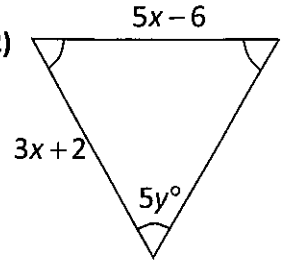


$90+65+x=180$

$155+x=180$

$x=25$

2)



$3x+2=5x-6$

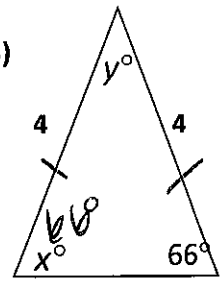
$-2x=-8$

$x=4$

$5y=60$

$y=12$

3)

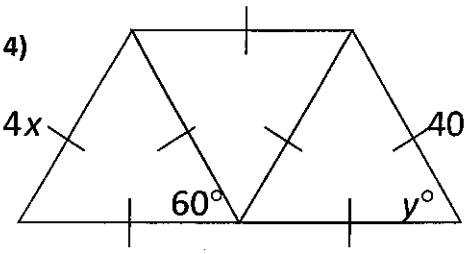


$2(66)+y=180$

$132+y=180$

$y=48°$

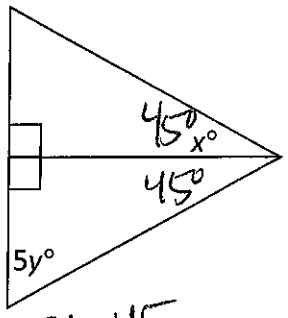
4)



$4x=40$ $\quad y=60°$

$x=10$

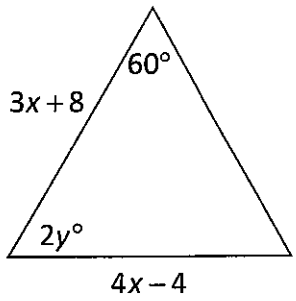
5) Equilateral Triangle



$5y=45$

$y=9$

6) Equilateral Triangle



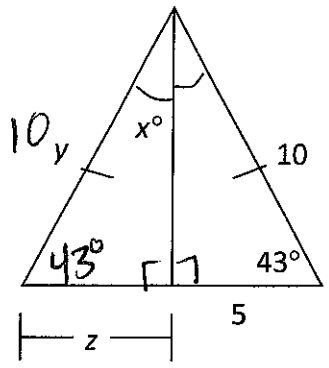
$3x+8=4x-4$

$-x=-12$

$x=12$

Find x, y and z

7)

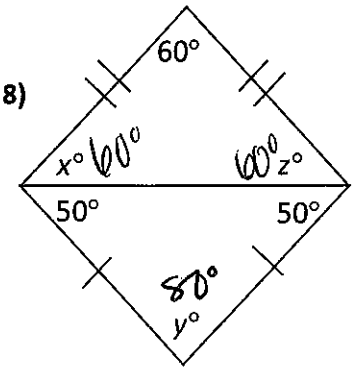


$z=5$

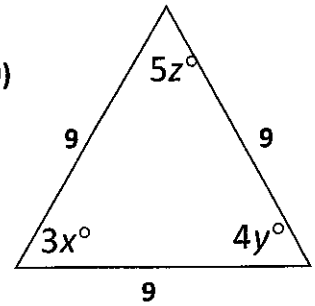
$x=47°$

$y=10$

8)



9)



$3x=60$ $\quad x=20$

$4y=60$ $\quad y=15$

$5z=60$ $\quad z=12$

Unit 3 Exterior angles of Triangles ANSWERS

Back Page Answers

1. 60°
2. 103°
3. 32°
4. 180°
5. 50°
6. 25°
7. 360°
8. 30°
9. 75°
10. 27°
11. 50°
12. $m\angle 1 = 111°$ $m\angle 2 = 69°$

    $m\angle 3 = 60°$ $m\angle 4 = 60°$

    $m\angle 5 = 51°$