Test Review (Triangles and Polygons)

Name KEY Date _____ Period _____

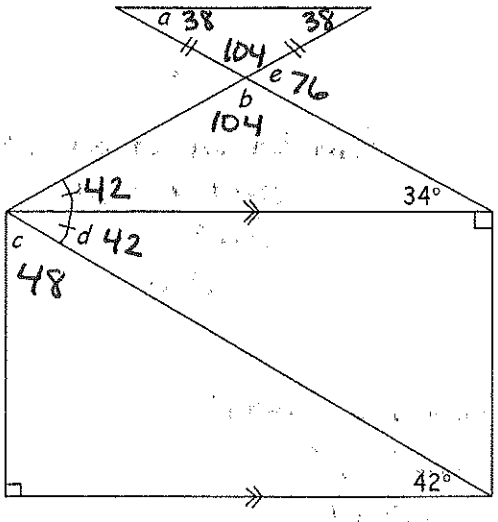
Using what you know about angles in triangles, parallel lines, and other angle relationships, find the missing angles in each of the following problems. *Hint - look at ALL of the ∠'s in the diagram.*

1)

$a = 38$ $b = 104$

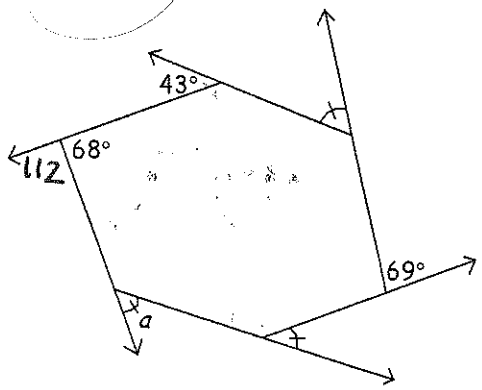
$c = 48$ $d = 42$

$e = 76$

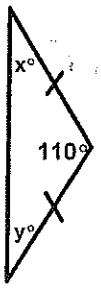


2)

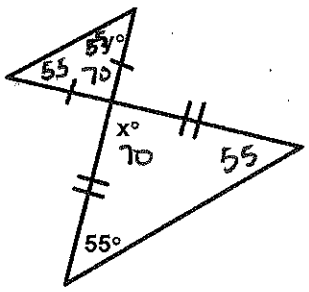
$a = 45.\overline{3}$



3) $x = 35$ $y = 35$



4) $x = 70$ $y = 55$



Find the sum of the interior angles of each convex polygon:

5) 24-gon

$(24-2)180 = 3960$

6) nonagon

$(9-2)180 = 1260$

7) 20-gon

$(20-2)180 = 3240$

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Find the measure of one interior angle for each convex regular polygon

8) Heptagon

$\frac{(7-2)180}{7} = 128.6°$

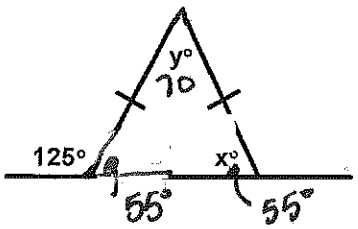
9) 14-gon

$\frac{(14-2)180}{14} = 154.3°$

10) decagon

$\frac{(10-2)180}{10} = 144°$

11) x = 55 y = 70



12) The perimeter of an equilateral triangle is 39. A side is (x + 2). Find x.

x = 11

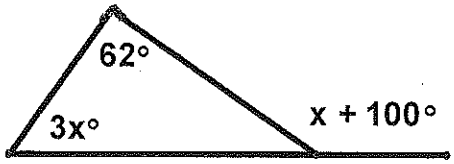
$x+2+x+2+x+2 = 39$

$3x+6 = 39$

$3x = 33$

$x = 11$

13) x = 19



$3x+62 = x+100$

$2x = 38$

$x = 19$

Find the number of degrees in one exterior angle for each convex regular polygon

14) 13-gon

$\frac{360}{13} = 27.7°$

15) Triangle

$\frac{360}{3} = 120°$

16) 23-gon

$\frac{360}{23} = 15.7°$

Determine the number of sides and give the name for each convex regular polygon, using the given information:

17) Exterior angle = 36°

$\frac{360}{n} = 36$

$n = 10$

18) Interior angle = 60°

$\frac{(n-2)180}{n} = 60$ $n = 3$

19) Interior angle = 108°

$\frac{(n-2)180}{n} = 108$

$n = 5$

20) Exterior angle = 60°

$\frac{360}{n} = 60$

$n = 6$

Test Review (Triangles and Polygons)

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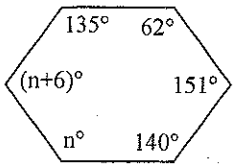
Use your knowledge of angles in polygons to solve each problem

$(6-2)180 = 720$

21)

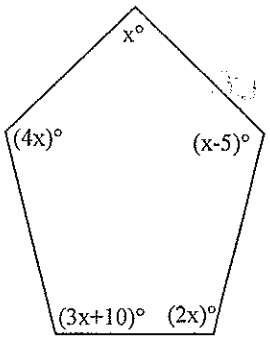


$135+62+151+140+n+n+6=720$

$2n+494=720$

n = 113

22)



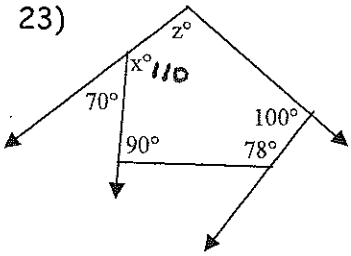
$(5-2)180 = 540$

$x+x-5+2x+3x+10+4x=540$

$11x+5=540$

x = 48.6

23)



$110+90+78+100+z=540$

$z=162$

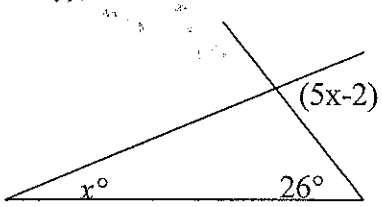
x = 110

z = 162

24) Find x = 7.

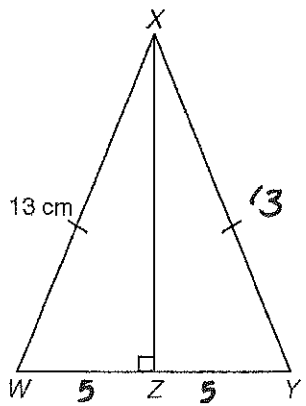
$x+26=5x-2$

$28=4x$



25) ΔWXY is isosceles. $\overline{WY}$ is 10 centimeters long. Find the XZ= 12

2 ΔWXY is isosceles.



Test Review (Triangles and Polygons)

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26) Find the sum of the exterior angles of a regular polygon with 30 sides.

360

27) Find x= 126

$x + x + x + x + x - 18 + x - 18 = 720$

$6x - 36 = 720$

$6x = 756$

28) Find the missing angles?

a = 36

b = 36

c = 36

d = 72

e = 18

f = 90

g = 108

h = 108

j = 108

k = 108

m = 54

n = 36