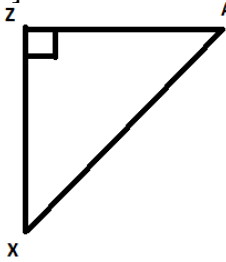


Name: _____
Date: _____
Class: _____

Geometry
Unit 3
Problem Set

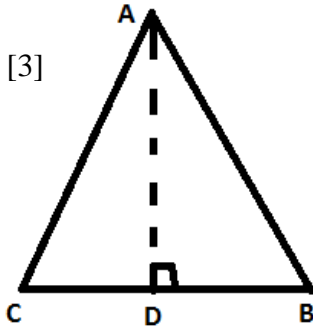
- 1) [6] For each of these sets of numbers - which could form a triangle (show your work).
a) 1, 2, 3 b) 2, 3, 4 c) 7, 8, 14

- 2) [4] Solve the following triangle



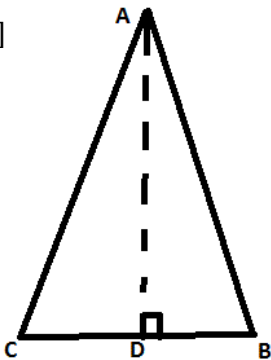
$m\angle X = 41^\circ$ and $XZ = 72$

- 3) [3]



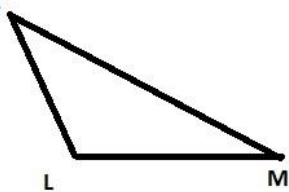
$\triangle ABC$ is equilateral with $AC = 22$. Find AD

- 4) [3]



$\triangle ABC$ is isosceles with $\angle A$ as the vertex angle.
If $AB = 17$ and $CB = 16$, find $m\angle B$

- 5) [3] K



In $\triangle KLM \rightarrow k = 2x - 2$, $m = 3x - 3$, and $l = 3x + 8$.
If the perimeter is 99, find and explain the value of k

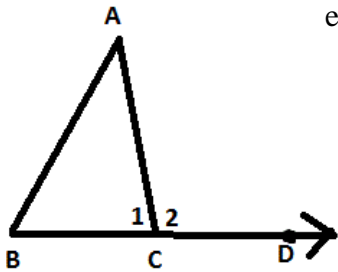
6) [3] In $\triangle DPQ$, $m\angle D = 3x - 3$, $m\angle P = 5x + 3$, and $m\angle Q = 2x + 10$. Which would be the shortest side of the triangle.

7) [3] If $\triangle WZP$ is isosceles and $\angle W$ is the vertex angle find the perimeter if $x = a + 21$, $p = 2a - 20$, and $w = 3a - 33$.

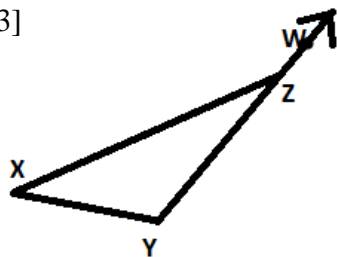
8) [2] If 2 sides of a triangle are 9 and 23 what is the range for the possible 3rd side of the triangle.

9) [3] If 2 sides of a right triangle are 9 and 23 what are all possible values for the 3rd side?

10) [3] If $m\angle B = x^2 + x + 4$, $m\angle A = 8x - 4$, and $m\angle C = 20x - 24$ find and explain $m\angle C$



11) [3]



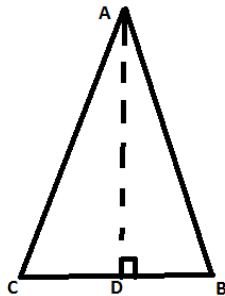
If $m\angle XZW = 6x + 8$, $m\angle X = 3x - 35$, and $m\angle Y = 4x + 21$ find $m\angle XZY$

12) [5] If the legs of a right triangle are represented by $3x$, $x + 3$, and $3x + 3$. Find the area of this triangle.

13) [4] If a triangle is created by the following points, find the area of this triangle: $(-2, 1)$, $(4, 5)$, and $(-1, -3)$.

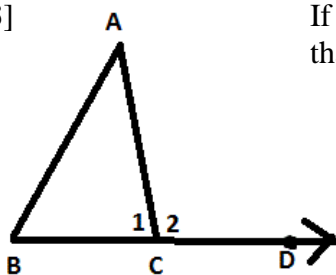
14) [3] What type of triangle is formed by the following points: $(1, 1)$, $(6, 5)$, and $(5, -4)$?

15) [3]



If $AB = AC$, the perimeter of triangle ABC is 64, $CB = 2x + 8$, and $AC = x^2 - x - 8$, find AB.

16) [3]



If $m\angle C = 14x + 8$, and $m\angle A = 8x - 9$, find an inequality that represents a range of possible values for x .

17) [3] If a pole which is 27 feet tall casts a shadow that is 17 feet long what is the angle of elevation for this shadow?

18) [3] If the 3 sides of a triangle are 17, 8, and 21, what type of triangle is this?

19) [3] If three buildings are located in the following manner: Building A is 5 miles from Building B, Building B is 12 miles from Building C, and Building C is 13 miles from Building A, describe the turn that you would make if walking from Building A to Building B, then turning to walk to Building C.

20) [4] If you are standing on top of a cliff looking at a sailboat in the harbor with an angle of depression of 12° knowing that the cliff is 102ft tall, what is the distance (to the nearest hundredth) from your eyes to the boat?