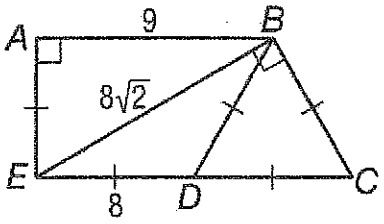
Name _____ Date _____ Period _____

ESK #2 Test 1 Part 1: Triangles

BOX IN YOUR ANSWER AND JUSTIFICATION

Level 2.0 – Knowledge

1. Classify each triangle by its sides. Justify your work.



a) $\triangle ABE$

Definition

scalene

* No equal sides

b) $\triangle EDB$

isosceles

* 2 congruent sides

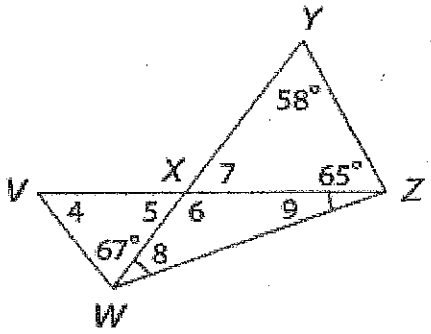
c) $\triangle DBC$

equilateral

* 3 congruent sides

Level 2.5 – Comprehension

2. Find the measure of each numbered angle. Justify your answer.



a) $\angle 4 = 56°$

$\triangle$ ∠ sum

b) $\angle 5 = 57°$

vertical ∠s

c) $\angle 6 = 123°$

supplementary ∠s

d) $\angle 7 = 57°$

$\triangle$ ∠ sum

e) $\angle 8 = 28.5°$

$\triangle$ ∠ sum

isosceles $\triangle$'s

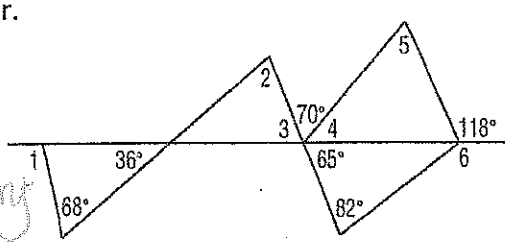
f) $\angle 9 = 28.5°$

$\triangle$ ∠ sum

isosceles $\triangle$'s

Level 3.0 – Application

3. Find the measure of each numbered angle. Justify your answer.



a) ∠1 = 104°
Exterior ∠s
Triangle ∠ sum + Supplementary

b) ∠2 = 79°
△ ∠ sum

c) ∠3 = 65°
Vertical ∠s

d) ∠4 = 45°
Supplementary ∠s

e) ∠5 = 73°
△ ∠ sum

f) ∠6 = 147°
Exterior ∠s

Level 4.0 – Synthesis

4. $\triangle LMN$ is an isosceles triangle, with $LM = LN$, $LM = 3x - 2$, $LN = 2x + 1$, and $MN = 5x - 2$.

a) $x = 3$

b) $LM = 7$
$LN = 7$
$MN = 13$

isosceles △'s

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ESK #2 Test 1 Part 1: Triangles

BOX IN YOUR ANSWER AND JUSTIFICATION

Level 5 – HONORS

1. In triangle MNO, $m\angle M$ is equal to $m\angle N$, and $m\angle O$ is 5 more than three times $m\angle N$. What is the measure of each angle?

$m\angle M = m\angle N = x$

$m\angle O = 5 + 3m\angle N = 5 + 3x$

$m\angle N = x$

$x + x + 5 + 3x = 180$

$5x + 5 = 180$

$5x = 175$

$\boxed{x = 35}$

$m\angle M = 35$

$m\angle N = 35$

$m\angle O = 5 + 3(35) = 5 + 105 = 110$

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BOX IN YOUR ANSWER AND JUSTIFICATION

Level 5 – HONORS

1. In triangle MNO, $m\angle M$ is equal to $m\angle N$, and $m\angle O$ is 5 more than three times $m\angle N$. What is the measure of each angle?