Geometry Honors
Unit 7: Relationships with Triangles
7.1b Midsegments

Mathematician: $\qquad$
Period: $\qquad$
LEVEL: EMERGING
Directions: In each triangle, $M, N$, and $P$ are midpoints of the sides. Name the line segment that is parallel to the one that is given.
1)

$\overline{N P} \|$ $\qquad$
2)

$\overline{K L} \|$ $\qquad$
3)

$\overline{M N} \|$ $\qquad$
4) The lengths of the midsegments of a triangle have lengths of 22,26 , and 30 . Which of the following could be the length of a side of this triangle? Select all that apply.
(A) 11
(B) 15
(C) 44
(D) 50
(E) 60
5) The sides of a triangle have lengths of 56,102 , and 86 . Which of the following could be the length of a midsegment of this triangle? Select all that apply.
(A) 38
(B) 43
(C) 48
(D) 51
(E) 57

Directions: Find the length of the indicated line segment.
6)

8)


| Statements | Reasons |
| :--- | :--- |
| $(1)$ | $(1)$ |
| $(2)$ | $(2)$ |
| $(3)$ | $(4)$ |
| $(4)$ |  |

Directions: Find the value of $x$. Then find the length of the indicated segment.

$x=$ $\qquad$
$U V=$ $\qquad$


SUM of $U A$ and $A T=$ $\qquad$
12)

$x=$ $\qquad$
$N M=$ $\qquad$ $F N=$ $\qquad$
SUM of $N M$ and $F N=$ $\qquad$
13) Complete the following proportions.

Given: $B$ and $G$ are midpoints of $\overline{M A}$ and $\overline{M K}$, $G B=6, B A=4, K G=10$

(A) $\frac{K A}{G B}=\square$
(B) $\frac{B A}{M A}=$
(C) $\frac{M A}{M K}=$
(D) $\frac{G B}{K A}=$
(E) $\frac{M G}{M K}=$
(F) $\frac{K G}{G M}=$
14) Select all of the statements that must be correct.

(A) $\frac{K G}{G M}=\frac{A B}{B M}$
(B) $\frac{K A}{G B}=\frac{A B}{B M}$
(C) $\frac{M B}{M A}=\frac{G B}{K A}$
(D) $\frac{M K}{M G}=\frac{M A}{M B}$
(E) Cannot be determined

