Unit 1

**Medians, Altitudes, Perpendicular Bisectors and Midsegments**

**Median: the segment that joins a \_\_\_\_\_\_\_\_\_\_\_ of a triangle with the \_\_\_\_\_\_\_\_\_\_\_\_\_of the opposite side.**

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| Ex. 1 | Ex. 2 |

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| **In /\ABC, CE and AD are medians. (DRAW PICTURE HERE)** | |
| **1) Find BE if AB = 18.** | **2) If CD = 2x + 5, BD = 4x - 1, and**  **AE = 5x - 2, find BE.** |

**Altitude**- a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_segment in which one endpoint is at a vertex and the other endpoint is on the side \_\_\_\_\_\_\_\_\_\_\_\_ that vertex (or on the extension of the side opposite the vertex).

**NOTE:** **There are three basic ways that an altitude could exist.**

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| ACUTE | RIGHT | OBTUSE |

**Perpendicular Bisector**- a special line in a triangle that hits the \_\_\_\_\_\_\_\_\_ of a side forming an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ made up of right angles.

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| **(DRAW PICTURE HERE)** |

**Angle Bisector-** any \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_ that separates an angle into two \_\_\_\_\_\_\_\_\_\_\_\_\_ angles.

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| **(DRAW PICTURE HERE)**  -BX is an angle bisector of / ABC, since / ABX = / XBC. |

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| Ex. 1  If m/ 1 = 41, find m/ 2 and m/ BAC. | Ex. 2  If m/ BAC = 78, find m/ 3 and m/ 4. | Ex. 3  If m/ 5 = 3x + 7 and  m/ 6 = 4x - 11, find x , m/ 5, m/ 6 and m/ BAC. |

**Midsegments:** If a segment joins the \_\_\_\_\_\_\_\_\_\_\_\_ of two sides of a triangle, then it is \_\_\_\_\_\_\_\_\_\_to the third side, and its measure \_\_\_\_\_\_\_\_\_\_ one-half the measure of the third side.

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| **(DRAW PICTURE HERE)**  If D is the midpoint of AB and E is the midpoint of AC, then DE || BC and DE = ½BC. |
| **(DRAW PICTURE HERE)**  A, B, and C are midpoints of the sides of /\XYZ. Complete each statement. |

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| Ex. 1  **If XY = 6m, find AC.** | Ex. 2  **If AB = 19, find XZ.** | Ex. 3  **If ZY = 14r, find BC.** |