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| **Distance Formula**:  |

Ex. 4: Find the “length” of the line segment. Ex. 5: Find the distance between the 2 points. Round to nearest tenth.( , ) and ( , ) (-3, 6) and (-10, -5) |
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| **Slope Formula**: **m**    |

Ex. 6: Find the slope. Ex. 7: Find the slope given two points.( , ) and ( , ) (-5, 1) and ( 4, -3)   |
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| **Midpoint Formula**:  |

**[image]**Ex 1: Find the midpoint. Ex. 2: Find the midpoint given two points.( , ) ( , )  (8, 11) and (-2, -1)x=y= midpoint ( , )Ex. 3 Find the endpoint, given the midpoint and an endpoint. Midpoint (3, 6) and Endpoint (-1, 2) |
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| **Equation of the Line**:  m = slope b = y-intercept |

Ex. 8: Find the slope. Ex. 9: Find the slope. (solve for y) Ex. 10: Find the slope, special case.    a.  b.  m = |
| Ex. 11: Write the equation of the line: Ex. 12: Write the equation of the line: Given the slope and a point. Given two points.Start by finding **m** using slope formula.Use **m** and choose either **point** to follow steps in Ex. 11.Put **m** and **(x,y)** into y=mx+b, to find **b**.Next, put **m and b** , into y=mx+b   (6, 2) and (4, 5)    |
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| **Parallel Lines** have the same slope. and  |

Ex. 13: Write the equation of the line that is parallel to  and passes through (9, 5)(follow steps in Ex. 11) |
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| **Perpendicular Lines** have “opposite reciprocal” slopes. $ (⊥,90°, right angle)$*ex.* $m=\frac{1}{2} and m=-2$ and |

Ex. 14: Find the slope perpendicular to: Ex. 15: Write the equation of the line perpendiculara.  b. 7 \*c.  \*d.  to  and passes through (6, 2)  Ex. 16: Write the equation of the line that is perpendicular to  and passes  through (-1, -4). |