

Watch. Practice. Understand. | Lesson 021

Summer Geometry Semester 2 Unit 1 Midpoint, Distance, Slope, Line Equation, Basic Tra...

Watch the matching video: <https://www.youtube.com/watch?v=GeDIEjywaeU>

Practice focus: Coordinate geometry

Original extra practice matched to the listed lesson topic.

Name: _____ Date: _____ Show your reasoning and check units.

01 Find the midpoint of A(-2, 5) and B(6, -1).

02 Find the distance between (1, 2) and (7, 10).

03 Find the point one-third of the way from (0, 0) to (9, 6).

04 Find the midpoint and slope of the segment from (2, 1) to (8, 5).

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Practice focus: Segments, angles and geometric basics

Original extra practice matched to the listed lesson topic.

Name: _____ Date: _____ Show your reasoning and check units.

05 B lies between A and C. $AB = 2x + 1$, $BC = x + 5$, $AC = 24$. Find x and both parts.

06 Supplementary angles measure $3x + 10$ and $2x + 20$ degrees. Find both angles.

07 Vertical angles measure $4x - 5$ and $2x + 25$ degrees. Find x .

08 State the dimensions of a point, a line and a plane.

Worked answers | Lesson 021

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01 Find the midpoint of A(-2, 5) and B(6, -1).

Average coordinates: $((-2 + 6)/2, (5 - 1)/2) = (2, 2)$.

02 Find the distance between (1, 2) and (7, 10).

$\sqrt{(7 - 1)^2 + (10 - 2)^2} = \sqrt{100} = 10$.

03 Find the point one-third of the way from (0, 0) to (9, 6).

Add one-third of the displacement (9, 6) to the start: (3, 2).

04 Find the midpoint and slope of the segment from (2, 1) to (8, 5).

Midpoint (5, 3); slope $(5 - 1)/(8 - 2) = 2/3$.

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05 B lies between A and C. $AB = 2x + 1$, $BC = x + 5$, $AC = 24$. Find x and both parts.

Segment addition: $3x + 6 = 24$, so $x = 6$. $AB = 13$ and $BC = 11$.

06 Supplementary angles measure $3x + 10$ and $2x + 20$ degrees. Find both angles.

$5x + 30 = 180$, so $x = 30$. Angles: 100° and 80° .

07 Vertical angles measure $4x - 5$ and $2x + 25$ degrees. Find x .

Vertical angles are equal: $4x - 5 = 2x + 25$, so $x = 15$; both angles are 55° .

08 State the dimensions of a point, a line and a plane.

A point is 0-dimensional, a line 1-dimensional, and a plane 2-dimensional.