Unit 1 Exam Review Lesson

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Chapter 1: Linear Systems

Chapter 2: Analytic Geometry

CHAPTER 1

Linear System: two or more linear equations that are considered at the same time.

To solve a linear system means to find the **Point of Intersection**

How to Solve a Linear System:

Method of Substitution: solving a linear system by substituting for one variable from one equation into the other equation.

Method of Elimination: solving a linear system by adding or subtracting to eliminate one of the variables.

Solve the following linear system using substitution:

$5 = 2y - x$
$7 = 3y - 2x$

Solve the linear system by elimination:

$5x + 2y = -11$
$3x + 2y = -9$

Solve the linear system using elimination

$10x + 4y = -1$
$8x - 2y = 7$

A small store sells used CDs and DVDs. The CDs sell for $9/each. The DVDs sell for $11/each. Cody is working part time and sells a total of $204 worth of CDs and DVDs during his shift. He knows that 20 items were sold. How many CDs did Cody sell? How many DVDs did Cody sell?

CHAPTER 2

Midpoint: point that divides a line segment into two equal line segments

Length: distance between two points

Median: Line segment joining a vertex of a triangle to the midpoint of the opposite side

Right Bisector: the line that passes through the midpoint of a line segment and intersects it at a 90 degree angle.

Circle: is the set of all points that are the same distance from a fixed point, the center.

Find the midpoint of the line segment joined by the following endpoints:

$$\text{MIDPOINT} = \left(\frac{x_1 + x_2}{2} , \frac{y_1 + y_2}{2} \right)$$

1) A(3,9) B(5,11)

2) A(5,1) B(6,0)

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$$\text{Length} = \sqrt{(x_2-x_1)^2 + (y_2-y_1)^2}$$

Find the length of the line with endpoints A(-3,1) and B(4,5)

Find the length of the line with endpoints A(5,7) and B(1,-1)

Determine the equation for the median from vertex A for the triangle with vertices A(4,4), B(-6,2), and C(2,0)

Find the equation of the right bisector of the line segment with endpoints A(1,4) and B(3,-2)

Write the equation of a circle with center (0,0) and a radius of 3 units

What is the radius of a circle defined by the equation $x^2 + y^2 = 81$

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A circle has a center (0,0) and passes through the point (8,-6). Find the equation of the circle

Is the point B(-5,9) inside this circle $x^2 + y^2 = 100$