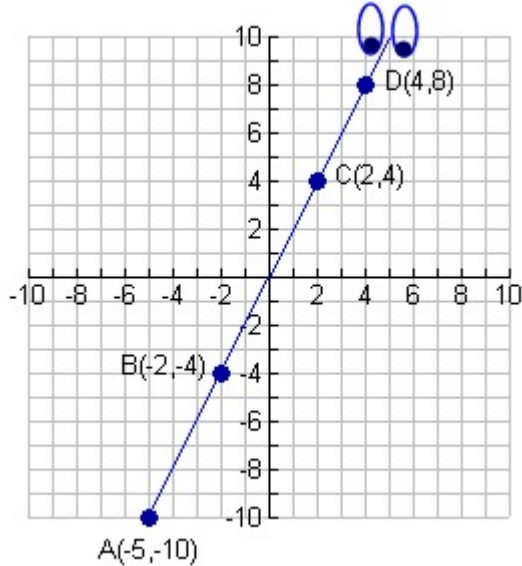# The Dot and the Line
A Romance in Lower Mathematics

1. Upon first meeting the line, the dot describes him as "stiff as a stick".

If the line is truly "stiff as a stick", he will maintain his same slant at all times. Mathematically speaking, his slope will be the same anywhere along his "body".
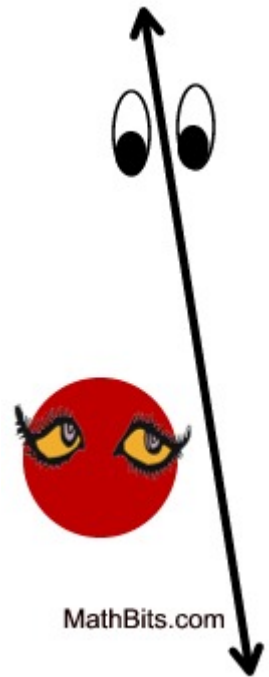
Stating the rise over the run, find the slopes of the following segments of the line to determine if this line is "stiff as a stick".

Slope from A to B = _____

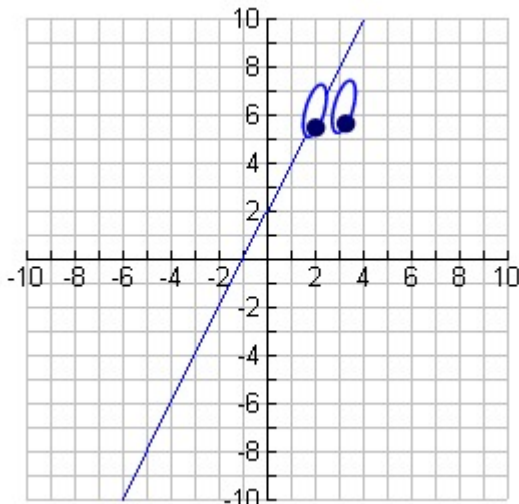Slope from B to C = _____

Slope from C to D = _____

Slope from A to D = _____

2. The line describes himself as "steady, consistent, and I know where I'm going!".
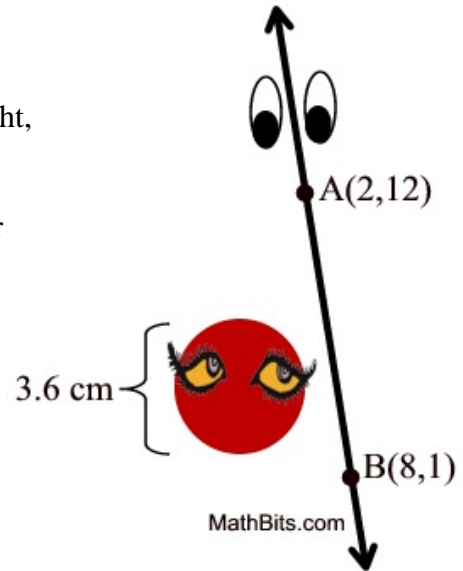   **a.)** Write the equation of the line shown on the graph below.

Equation: _____

   b.) Since all good lines "know where they are going", state the coordinates of the point on this line when it passes through an x-value of 9.
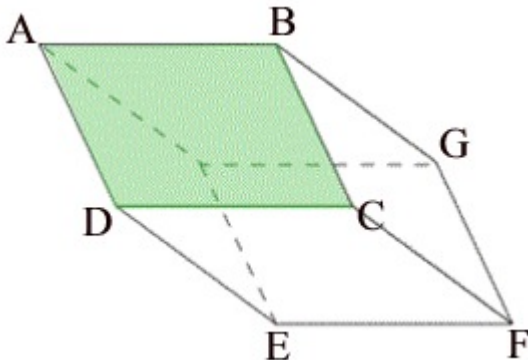
3. The line dreams of the perfection of his beloved dot.

According to the measurements seen in the diagram at the right, which measurement is longer: the circumference of the dot, or the length of the line's segment from point A to point B? Assume all measurements to be in centimeters and show your work to support your conclusion.

A(2,12)

3.6 cm

B(8,1)

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4. The line exclaims "hot stuff" when he discovers he can change direction and bend. During one of the line's first "bends" he creates an angle of 162°. If he continues to bend at this angle at equal successive intervals along his "body", what geometrical figure will he be forming? Explain mathematically how you came to your conclusion.

5. The dot refers to the line as dazzling, clever, eloquent and complex as he bends himself into a parallelepiped. A parallelepiped is a prism which has a parallelogram as its base. It is a polyhedron with 6 faces which are all parallelograms.

A   B

G

D   C

E   F

If $AB = 18$, $AD = 12$ and $BG = 20$, find:

$EF =$ _____

$FG =$ _____

$DE =$ _____

$\overline{AB} \parallel \overline{DC} \parallel \square$

$\overline{AD} \parallel \overline{BC} \parallel \square$

$\overline{DE} \parallel \overline{FC} \parallel \square$