

MATH 1080, SPRING 2006, HW SET 1

You need to show all your work and explain with following the guideline described in the class webpage to get the full credit.

HW 1 Due on Thursday 01/19/06

0. Memorize all equations of lines and graphs of functions discussed in class.
1. #1 on p.8 of Spivak's book.
2. Find the equations of the following straight lines:
 - (1) the line with slope -2 and passing through the origin
 - (2) the line with slope 3 and passing through the y -intercept -5
 - (3) the line with slope -2 and passing through the point $(-1, -4)$
 - (4) the line passing through two points
 - (5) the vertical line passing through $(3, 8)$
 - (6) the horizontal line passing through $(2, -1)$
 - (7) the y -axis
 - (8) the x -axis
3. Find the arc length ℓ of a sector with angle θ radians inside the disc with radius r .
4. Find the following limits:
 - (1) $\lim_{x \rightarrow 2} \frac{x^2 + 7x + 10}{x + 2} =$
 - (2) $\lim_{x \rightarrow \infty} \frac{1}{x - 1} =$
 - (3) $\lim_{x \rightarrow 1} \frac{1}{x - 1} =$
 - (4) $\lim_{x \rightarrow \frac{\pi}{2}} \frac{\cos x}{x} =$
 - (5) $\lim_{x \rightarrow 0} \frac{\sin(3x)}{x} =$

Date: January 11, 2006.