Name ___ KEY ___

Time just right med = 16.5/22

mean -17/20

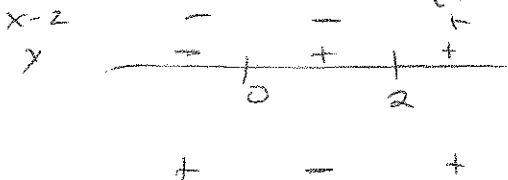**1. Solve for x:**

a. $3x - 5 \geq 1$

$3x - 5 \geq 6$

$x \geq 2$ $[2, \infty)$ ~

b. $x^2 - 2x \leq 0$ $x(x-2) \leq 0$

$x - 2$

x

$[0, 2]$ ✓4

2. Find the equation of the straight line:

a. which goes through the points $(1, -2)$ and $(-3, 4)$

$m = \dfrac{4 - (-2)}{-3 - 1} = \dfrac{6}{-4} = -\dfrac{3}{2}$

$y - 4 = -\dfrac{3}{2}(x + 3)$

$y = -\dfrac{3}{2}x - \dfrac{9}{2} + 4$

$y = -\dfrac{3}{2}x - \dfrac{1}{2}$ -6

b. which goes through the point $(3, -4)$ parallel to the line $4x + 2y = 3$.

$\dfrac{y + 4}{x - 3} = -2$ $y = -2x + 6 - 4$ $2y = -4x + 3$

$y + 4 = -2(x - 3)$ | $y = -2x + 2$ | $y = -2x + \dfrac{3}{2}$ -3

$m = -2$

3. If $f(x) = 1/x$, and $g(x) = 2x + 1$, find the domain of $f(g(x))$.

$g(x) \neq 0$ $2x + 1 = 0$ $2x = -1$ $x = -\dfrac{1}{2}$ -11

$\boxed{x \neq -\dfrac{1}{2}}$

4. Find the limit:

$\lim\limits_{x \to 4} \dfrac{x^2 - 16}{x - 4} = \lim\limits_{x \to 4} \dfrac{(x - 4)(x + 4)}{x - 4} = \lim\limits_{x \to 4}(x + 4) = 4 + 4 = 8$ -1
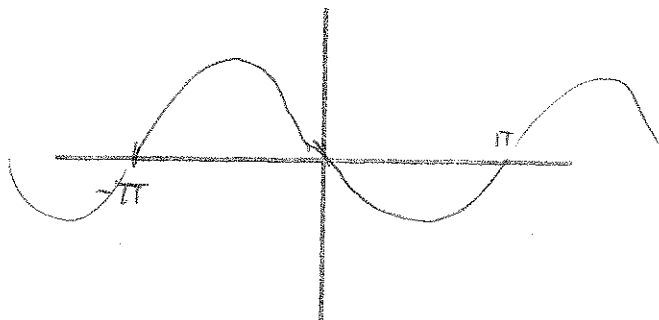
5. Sketch the graph of:

a. $y = \sin(x + \pi)$

$x + \pi = 0$
$x = -\pi$

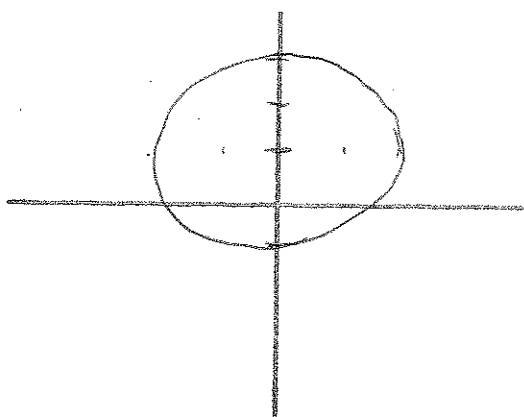b. $x^2 + y^2 - 2y = 3$

$x^2 + y^2 - 2y + 1 = 3 + 1 = 4$

$x^2 + (y - 1)^2 = 4$

circle cntr $(0, 1)$

rad $= 2$

-12