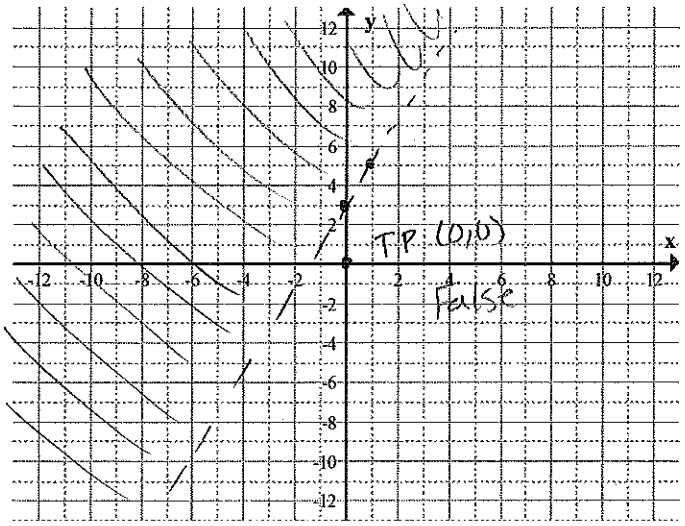
MAC1105 College Algebra
7.6 Practice Problems

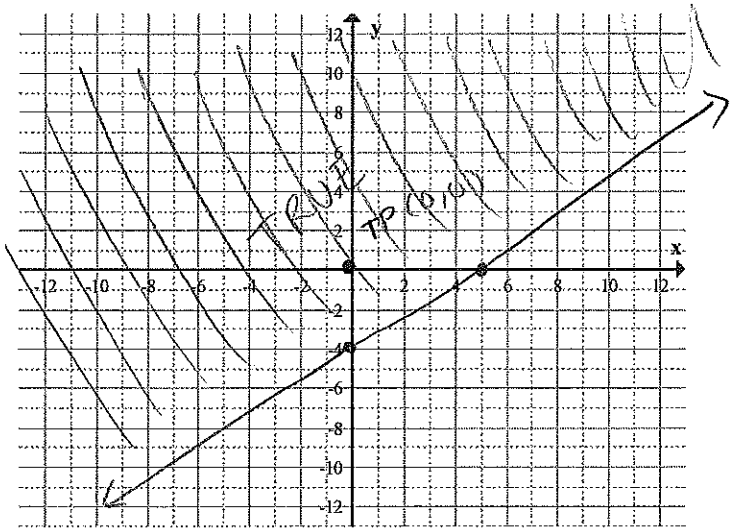
1. Graph the inequality. $y>2x+3$



(1) Graph Boundary dashed
$y=2x+3$

(2) Shading
(a) Test point not on line (0,0)
(b) $0>2(0)+3$
$0>3$
False

2. Graph the inequality. $4x-5y\leq 20$



(1) Graph Boundary Solid
$4x-5y=20$

x-int $y=0$
$\frac{4x}{4}=\frac{20}{4}$
$x=5$
(5,0)

y-int $x=0$
$\frac{-5y}{-5}=\frac{20}{-5}$
$y=-4$
(0,-4)

(2) Shading
(a) TP (0,0)
(b) $4(0)-5(0)\leq 20$
$0\leq 20$ True

3. Graph the inequality. $y<-3$

(1) Graph Boundary dashed
$y=-3$

(2) Shading
(a) TP (0,0)
(b) $0<-3$
False

4. Graph the inequality. $x^2+y^2<16$

① Graph Boundary dashed

$x^2+y^2=16$

Circle → center (0,0)

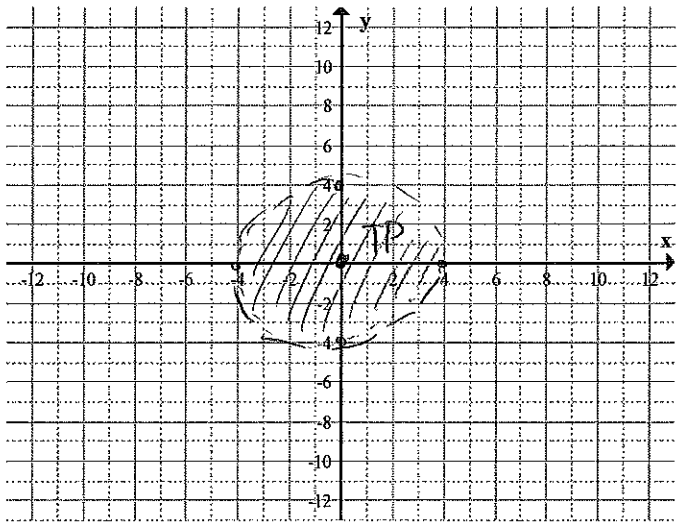
$R=4$

② Shading

ⓐ TP (0,0)

ⓑ $0^2+0^2<16$

$0<16$ True



5. Graph the system of inequalities.

$\begin{cases} x>5 \\ y\le 8 \end{cases}$

$X>5$

① Boundary dashed

$x=5$

② Shading

ⓐ TP (0,0)

ⓑ $0>5$

False

$y \le 8$

① Boundary solid

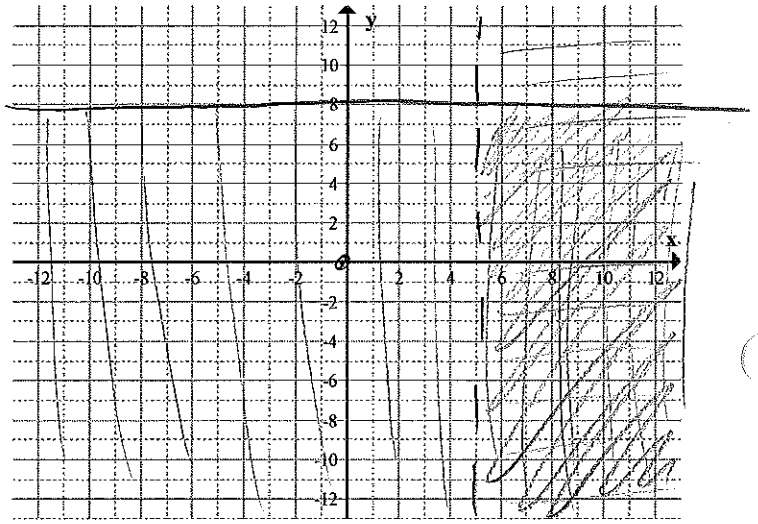
$y=8$

② Shading

ⓐ TP (0,0)

ⓑ $0<8$

True



6. Graph the system of inequalities.

$\begin{cases} y\le -\frac{2}{3}x-2 \\ 3x-5y<15 \end{cases}$

$y \le -\frac{2}{3}x-2$

① Boundary solid

$y=\frac{-2}{3}x-2$

$m=\frac{-2}{3}$ y-int (0,-2)

② Shading

ⓐ TP (0,0)

ⓑ $0<-\frac{2}{3}(0)-2$

$0<-2$

False

$3x-5y<15$

① Boundary dashed

$3x-5y=15$

x-int

$\frac{3x}{3}=\frac{15}{3}$

$x=5$

(5,0)

y-int

$-5y=15$

$y=-3$

(0,-3)

② Shading

ⓐ TP (0,0)

ⓑ $3(0)-5(0)<15$

$0<15$

True