

**MATH 1151 QUIZ-3** (15 minutes)

**1. (3 points)** If  $\tan \theta = 4$ , find the exact value of  $\tan \theta + \tan(\frac{\pi}{2} - \theta)$ .

**Solution:**  $\tan$  and  $\cot$  are complementary functions, so  $\tan(\frac{\pi}{2} - \theta)$  is equal to  $\cot \theta$ . Since  $\cot \theta = \frac{1}{\tan \theta} = \frac{1}{4}$ , we have that answer is  $4 + \frac{1}{4} = \frac{17}{4}$ . **Q.E.D.**

**2.(3 points)** Use transformations to graph  $y = \cos \frac{\pi}{2}x$ .

**Solution:** Period is  $\frac{2\pi}{\frac{\pi}{2}} = 4$ . So if you draw the graph of  $\cos$  for  $[0,4]$  it will be enough. Just draw the graph of  $\cos$  for this interval. **Q.E.D.**

**3.(4 points)** By using transformations graph the function  $y = 3 \sin(3x - \pi)$ , find it's amplitude, period and phase shift.

**Solution:** I am not going to draw the graph. Amplitude is 3, period is  $\frac{2\pi}{3}$  and phase shift is  $\frac{\pi}{3}$  unit to the right. **Q.E.D.**