

Exam #3 Corrections

To correct your exam, do the following problems **and** any problems missed on the exam on a separate sheet of paper stapled to Exam #3. You must show all work.

The corrections are due on Friday, March 21st at the beginning of the final exam.

You can earn up to a third of the missed points on the exam or 5 points (whichever is greater).

1. Convert the point $(x, y) = (-4, -4\sqrt{3})$ into polar coordinates. (Give exact values.)
2. Find the exact value of $\tan(\sec^{-1}(3))$.
3. Suppose the number of visible sunspots is given by the sinusoidal function

$$s(t) = 50 \cos \frac{2\pi}{11}(t - 3) + 60$$

where t is the number of years after 2000. ($t = 0$ is the year 2000, $t = 1$ is the year 2001, etc.)

Find the values of t in the interval $[10, 30]$ for which the number of visible sunspots is 35. (Note: The values do not need to be whole numbers.)

4. For the vectors $\mathbf{u} = 3\mathbf{i}$ and $\mathbf{v} = 2\mathbf{i} - 6\mathbf{j}$, find the following:
 $\mathbf{u} \cdot \mathbf{v}$ and $\mathbf{u} \cdot (3\mathbf{u} + 2\mathbf{v})$