

Math153.02

Date:

Name:

Score:

Exam 5 (Sections 6.6 - 7.2)

1. Evaluate the expression without the aid of a calculator.

a. $\arcsin 0$ where the range is $\left[-\frac{p}{2}, \frac{p}{2}\right]$ _____

b. $\arctan\left(-\frac{\sqrt{3}}{3}\right)$ where the range is $[0, p]$ _____

c. $\arccos\left(-\frac{\sqrt{3}}{2}\right)$ where the range is $\left[-\frac{p}{2}, \frac{p}{2}\right]$ _____

2. Use a calculator to evaluate

a. $\arctan 3.2$ _____

b. $\arcsin\left(\frac{3}{4}\right)$ _____

3. Find the exact value of the expression. (**Hint: Make a sketch of a right triangle.**)

a. $\sin\left[\arccos\left(-\frac{2}{3}\right)\right]$ _____

b. $\cot\left(\arctan\frac{5}{8}\right)$ _____

4. **Airplane Ascent** During takeoff an airplane's angle of climb is 18° and its speed is 275 feet per second.

a. Find the plane's altitude after 1 minute.

b. How long will it take the plane to climb to an altitude of 10,000 feet?

5. **Height** You are standing 100 feet from the base of a platform from which people are bungee jumping. The angle of elevation from your position to the top of the platform from which they jump is 51° . From what height are the people jumping?

