

Exam I Hints and Answers
Math 126 B & C Autumn 2013

Version 1: Problem 1 is about the point $(-5, -5\sqrt{3})$:

1. (a) $\left(10, \frac{-2\pi}{3}\right)$; (b) $\left(-10, \frac{-5\pi}{3}\right)$
 2. There are infinitely many correct answers.
 3. (a) hyperbolic paraboloid; (b) hyperbolic cylinder; (c) cone; (d) hyperboloid of one sheet.
 4. $x = -30 + 14t, y = -25 + 12t, z = t$
 5. (a) $\kappa\left(\frac{\pi}{2}\right) = \frac{4}{13}$; (b) One possibility is $(0, 4, 5\pi)$.
 6. $k = 10$
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Version 2: Problem 1 is about the point $(-4\sqrt{3}, -4)$:

1. (a) $\left(8, \frac{-5\pi}{6}\right)$; (b) $\left(-8, \frac{-11\pi}{6}\right)$
2. There are infinitely many correct answers.
3. (a) hyperbolic cylinder; (b) hyperboloid of one sheet; (c) cone; (d) hyperbolic paraboloid.
4. $x = -15 + 16t, y = -20 + 17t, z = 3t$
5. (a) $\kappa\left(\frac{\pi}{2}\right) = \frac{1}{4}$; (b) One possibility is $(0, 5, 5\pi)$.
6. $a = 10$