

EXAM 1 IS THURSDAY IN QUIZ SECTION

Allowed:

1. A **Ti-30x IIS Calculator**
2. An 8.5 by 11 inch sheet of handwritten notes (front/back)

Notes

1. 4 pages of questions, 50 minutes, use your time effectively.
2. **Show your work using methods from class.**
3. No make-up exams; if you are physically unable to be at the test let me know and your grade will be prorated.

Quick Review

Ch 1-2: Speed, distance, time, conversion and the distance formula

- $\text{speed} = \frac{\text{dist}}{\text{time}}$
- $\text{dist} = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

Ch 3: Equations for circles and horizontal/vertical lines

- Horizontal Line: $y = k$
- Vertical Line: $x = h$
- Circle: $(x - h)^2 + (y - k)^2 = r^2$, where (h, k) = center, r = radius

Ch 4: Equations for lines, perpendicular lines, parametric motion

- $y = m(x - x_1) + y_1$, where slope $= m = \frac{y_2 - y_1}{x_2 - x_1}$
- uniform linear motion:
 - $x = x_1 + v_x t$, $y = y_1 + v_y t$, where $v_x = \frac{x_2 - x_1}{T}$ and $v_y = \frac{y_2 - y_1}{T}$

Ch 5: Functional notation and algebra

- Using $y = f(x)$
- Completely simplify $\frac{f(x+h)-f(x)}{h}$
- Semicircles

Ch 6: Graphs and Multipart functions

- Absolute values
- Using and solving equations involving multipart functions.
- Labeling graphs and functions.
- Using labels on graphs to give areas.

Ch. 7: Quadratics

- Mechanics: *vertex*: $h = -\frac{b}{2a}$ and *roots*: $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$
- Optimization:
 - Label
 - What do we WANT?
 - What is GIVEN?
 - Find quadratic for what we want and use vertex
 - Interpret answer

Other things you used in homework:

- area of a circle = πr^2 volume of a sphere = $\frac{4}{3}\pi r^3$
- density = $\frac{\text{mass}}{\text{volume}}$ $a^2 + b^2 = c^2$
 - *Algebra Skill*: Simplifying Fractions
 - *Algebra Skill*: Solving... some equations had root or powers
 - *Algebra Skill*: Solving systems of equations

What do you want to do with the rest of our time?

Please ask specific questions from old exams. Preferably my old exams first, then perhaps Ostroff, then perhaps Conroy.