Name. _____ **Section**. _____

Applied Differential Equations 2250-1
Midterm Exam 1 In-Class
Wednesday, 29 January, 2003

Instructions: This in-class exam is 15 minutes. Hand-written or computer-generated notes are allowed, including xerox copies of tables or classroom xerox notes. Calculators are allowed. Books are not allowed.

5. (Linear Equations)

(a) Solve $10v' = -98 - 49v$, $v(0) = 47$.

(b) Solve $y' = v(t)$, $y(0) = 10$, where $v(t)$ is the answer from (a).

(c) Determine t when $y(t)$ is a maximum.

(d) Find the limit of $v(t)$ at $t = \infty$.

Reference: This is a special case of the kinematics problem $my'' = -mg - ky'$, $y(0) = 0$, $y'(0) = v_0$.

Name. _____ **Section**. _____

Applied Differential Equations 2250-2
Midterm Exam 1 In-Class Version A-L
Wednesday, 29 January, 2003

Instructions: This in-class exam is 15 minutes. Hand-written or computer-generated notes are allowed, including xerox copies of tables or classroom xerox notes. Calculators are allowed. Books are not allowed.

5. (Linear Equations)

(a) Solve $v' = -32 - 2v$, $v(0) = 90$.

(b) Solve $y' = v(t)$, $y(0) = 10$, where $v(t)$ is the answer from (a).

(c) Determine t when $y(t)$ is a maximum.

(d) Find the limit of $v(t)$ at $t = \infty$.

Reference: This is a special case of the kinematics problem $my'' = -mg - ky'$, $y(0) = 0$, $y'(0) = v_0$.

Name. _____ **Section**. _____

Applied Differential Equations 2250-2
Midterm Exam 1 In-Class Version M-Z
Wednesday, 29 January, 2003

Instructions: This in-class exam is 15 minutes. Hand-written or computer-generated notes are allowed, including xerox copies of tables or classroom xerox notes. Calculators are allowed. Books are not allowed.

5. (Linear Equations)

(a) Solve $v' = -32 - 4v$, $v(0) = 95$.

(b) Solve $y' = v(t)$, $y(0) = 10$, where $v(t)$ is the answer from (a).

(c) Determine t when $y(t)$ is a maximum.

(d) Find the limit of $v(t)$ at $t = \infty$.

Reference: This is a special case of the kinematics problem $my'' = -mg - ky'$, $y(0) = 0$, $y'(0) = v_0$.