

Math 2250-004  
HW 2, due Wed. Jan. 24 at the start of class

Recall that problems which are not underlined are good for seeing if you can work with the underlying concepts; only the underlined problems need to be handed in.

1.4: 36, 41, 42, 45, 46, 49: modeling and solving problems with first order separable DEs. Note: The correct answer to 42 is 4.25 billion years, not the 1.25 billion years that appears in the back of the book.

1.5: 1, 3, 7, 8, 13, 14, 21, 24, 29, solving linear DE's and IVP's. 33, 36, 38: input-output modeling and solving problems with first order linear DE's.

w2.1 In Quiz 1 you were told the solutions  $y(x)$  to the differential equation

$$\frac{dy}{dx} = y - x$$

and asked to verify that the given functions actually were solutions. You now know how to find the solutions, since this is a linear differential equation. Find them!

EP 3.7:

*solving first order linear DE's for electrical circuits*

1, 2, 7

2.1:

*solving IVP's for first order autonomous DE's with quadratic right hand sides, using partial fractions as necessary:*

1, 3, 6, 9