MA166: Solutions to Homework 1-10

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1 Homework 8 Solutions

Problem 1.1 (WebAssign, HW8, 1)**.** A variable force of $2x^{-2}$ pounds moves an object along a straight line when it is x feet from the origin. Calculate the work done in moving the object from $x = 1$ ft to $x = 15$ ft. (Round your answer to two decimal places.)

Solution. Recall the formula for the work done by a fore as a function of distance? It is given by

$$W = \int_1^1 5F(x)\,\mathrm{d}x = 2\int_1^{15} x^{-2}\,\mathrm{d}x = -2\int_1^{15} \frac{1}{x} = -\frac{2}{x}\Big|_1^{15} = -\frac{2}{15} + \frac{2}{1} = \frac{28}{15}.$$

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Problem 1.2 (WebAssign, HW8, 2)**.**

Solution. ■

Problem 1.3 (WebAssign, HW8, 3)**.**

Solution. ■

Problem 1.4 (WebAssign, HW8, 4)**.**

Solution. ■

Problem 1.5 (WebAssign, HW8, 5)**.** the spout.

Solution. ■

Problem 1.6 (WebAssign, HW8, 6)**.**

Solution. ■

Problem 1.7 (WebAssign, HW8, 7)**.**

Solution. ■

Problem 1.8 (WebAssign, HW8, 8)**.**

Solution. ■

2 Homework 9 Solutions

Problem 2.1 (Stewart §7.1, Exercise 1)**.**

Solution. ■

Problem 2.2 (Stewart §7.1, Exercise 3)**.**

Solution. ■

Problem 2.3 (Stewart §7.1, Exercise 10)**.**

Solution. ■

Problem 2.4 (Stewart §7.1, Exercise 17)**.**

Solution. ■

Problem 2.5 (Stewart §7.1, Exercise 27)**.**

Solution. ■

Problem 2.6 (Stewart §7.1, Exercise 37)**.**

Solution. ■

Problem 2.7 (Stewart §7.1, Exercise 62)**.**

Solution. ■

3 Homework 10 Solutions

Problem 3.1 (Stewart §7.2, Exercise 1)**.**

Solution. ■

Problem 3.2 (Stewart §7.2, Exercise 7)**.**

Solution. ■

Problem 3.3 (Stewart §7.2, Exercise 11)**.**

Solution. ■

Problem 3.4 (Stewart §7.2, Exercise 17)**.**

Solution. ■

Problem 3.5 (Stewart §7.2, Exercise 23)**.**

Solution. ■

Problem 3.6 (Stewart §7.2, Exercise 24)**.**

Solution. ■

Problem 3.7 (Stewart §7.2, Exercise 35)**.**

Solution. ■

Problem 3.8 (Stewart §7.2, Exercise 61)**.**

Solution. ■