

Solutions for *Elementary Mathematical Analysis*

You'll need to create a new file for the solution of each problem in the solutions subdirectory. Also, if you rename your main file, change TextbookExample in this document (two places) to your new name.

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Introduction

Functions

Section 1.1 Lab (Patterns All Around Us)

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Section 1.4 Lab (Through the Looking Glass)

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Section 1.5 Exercises**P1** (0105Quad1)

- a. $y \approx 1.09578x^2 - 2.69643x + 1.13637$
- b. $y \approx -1.48736x^2 + 5.86598x - 8.11229$

P2 (0105Quad2)

- a. $y \approx -0.57142x^2 + 2.2x + 1.94286$
- b. $y \approx -1.48736x^2 + 5.86598x - 8.11229$

P3 (0105Arch)

- a. $23.557x - 24.427$
- b. 1248 cm

P4 (0105ModelDay)

From day 28 to 314, hence 286 days.

P5 (0105Hourly)

- a. insert graphic
 - b. $y \approx .4089x + 9.8601$
 - c. 98.6%. It would seem so...
 - d. $0.0124x^2 + .2473x + 10.1241$
 - e. 99.8%. Yes, more so than the linear.
 - f. Individual results will vary.
-

P6 (0105traffic)

- a. $y \approx -0.00746x^2 + 1.14821 + 4.80714$
 - b. 47.9 ft
-

P7 (0105LM1)

- a. $\frac{2}{5}x + \frac{5}{2} = y$
 - b. $0 = y$
 - c. $\frac{23}{11}x - \frac{27}{22} = y$
 - d. $\frac{9}{23}x - \frac{19}{5} = y$
-

P8 (0105LM2)

- a. $-\frac{5}{4}x - \frac{3}{4} = y$
 - b. $x = y$
 - c. $-4x + \frac{11}{3} = y$
 - d. $-\frac{484}{225} + \frac{7894}{5625} = y$
-

P9 (0105high)

NY $y \approx 25.61 \cdot \sin(.5090x - 2.0685) + 56.8797$

DC $y \approx 22.7410 \cdot \sin(.4946x - 1.9503) + 65.3889$

TX $y \approx 17.742 \cdot \sin(.5043x - 2.0110) + 79.1803$

They will never intersect.

P10 (0105sun)

- a. $y \approx 32.2267 \sin(.3993x - .5706) + 26.9744$
 - b. 40.3
-

P11 (0105newton)

- a. insert graphic
 - b. $r^2=99.98\%$
 - c. $T(x) \approx 118.0705 \cdot .9511^x + 72.$
 - d. It seems exceedingly close to the data.
-

Section 16.1 Exercises**P1** (probP1)

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Section A.1 Exercises**P1** (probP1)

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Section A.2 Exercises**P1** (probP1)

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Section A.3 Exercises**P1** (probP1)

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Section A.4 Exercises**P1** (probP1)

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Section A.6 Exercises**P1** (probP1)

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Solutions