Doing Math with Python

Use Programming to Explore Algebra, Statistics, Calculus, and More!

by Amit Saha

Errata updated to print 10

Page	Error	Correction	Print corrected
8	. . . they take a string as input (`'1'`) and return a number (`2` or `2.0`)	. . . they take a string as input (`'1'`) and return a number (`1` or `1.0`)	Print 3
47	The x-axis of the graph displays the **force**, and the y-axis displays the **distance**	The x-axis of the graph displays the **distance**, and the y-axis displays the **force**	Print 7
48	*Figure 2-12: Visualization of the relationship between the gravitational force and the **squared** distance*	*Figure 2-12: Visualization of the relationship between the gravitational force and the distance*	Print 3
52	At ❷, we calculate the time of flight and then call the `frange()` function with the values for `start`, `final`, and **`increment`** set to 0, `t_flight`, and 0.001, respectively.	At ❷, we calculate the time of flight and then call the `frange()` function with the values for `start`, `final`, and **`interval`** set to 0, `t_flight`, and 0.001, respectively.	Print 7
55	The `for` loop starting at ❷ calculates the value of the function above for each of these values and uses the label `y` to refer to the **list of results**.	The `for` loop starting at ❷ calculates the value of the function above for each of these values and uses the label `y` to refer to the **result**.	Print 3
76	Ice cream sales and crime are correlated because they both go up as the weather gets hotter during the summer.	Ice cream sales and crime **rate** are correlated because they both go up as the weather gets hotter during the summer.	Print 3
77	`y_square=[]` `  for yi in y:` `  y_square.append(yi**2)`	`y_square=[]` `for yi in y:` `  y_square.append(yi**2)`	Print 7
87	Insertion	If you are unable to access the service, download a copy of the file from *https://github.com/doingmathwithpython/code/blob/master/chapter3/solutions/correlatesummer.csv*.	Print 7
97	`>>> factors = factor(expr)` `>>> expand(factors)` `x**2 - y**2`	`>>> from sympy import expand` `>>> factors = factor(expr)` `>>> expand(factors)` `x**2 - y**2`	Print 3

Page	Error	Correction	Print corrected
99	```❶ series = x ❷ for i in range(2, n+1): ❸ series = series + (x**i)/i pprint(series)```	```❶ series = x ❷ for i in range(2, n+1): ❸ series = series + (x**i)/i pprint(series)```	Print 4
112	```from sympy import Symbol, sympify, solve```	```from sympy import Symbol, sympify, solve, SympifyError```	Print 4
115	. . . (using the first letter of the color in each case).	. . . (using the first letter of the color in each case, **except black for which you use `'k'`**).	Print 7
132	```def probability(space, event): return len(event)/len(space)```	```from sympy import FiniteSet def probability(space, event): return len(event)/len(space)```	Print 7
132	```for num in s: ❸ if check_prime(num): primes.append(num)```	```for num in space: ❸ if check_prime(num): primes.append(num)```	Print 2
135	Deletion	~~`import matplotlib.pyplot as plt`~~	Print 7
139	```probability = [1/6, 1/6, 1/3, 2/3]```	```probability = [1/6, 1/6, 1/3, 1/3]```	Print 2

Page	Error	Correction	Print corrected
164–165	**Transformation 1** (0.85 probability): $x_{n+1} = 0.85x_n + 0.04y_n$ $y_{n+1} = -0.04y_n + 0.85y_n + 1.6$ **Transformation 2** (0.07 probability): $x_{n+1} = 0.2x_n - 0.26y_n$ $y_{n+1} = 0.23y_n + 0.22y_n + 1.6$ **Transformation 3** (0.07 probability): $x_{n+1} = -0.15x_n - 0.28x_n$ $y_{n+1} = 0.26y_n + 0.24y_n + 0.44$ **Transformation 4** (0.01 probability): $x_{n+1} = 0$ $y_{n+1} = 0.16y_n$	**Transformation 1** (0.85 probability): $x_1 = 0.85x + 0.04y$ $y_1 = -0.04x + 0.85y + 1.6$ **Transformation 2** (0.07 probability): $x_1 = 0.2x - 0.26y$ $y_1 = 0.23x + 0.22y + 1.6$ **Transformation 3** (0.07 probability): $x_1 = -0.15x + 0.28y$ $y_1 = 0.26x + 0.24y + 0.44$ **Transformation 4** (0.01 probability): $x_1 = 0$ $y_1 = 0.16y$	Print 3
194	`abs(x_old - x_new) > epsilon`	`abs(x_old - x_new) <= epsilon`	Print 3
195	`from sympy import Derivative, Symbol, sympify`	`from sympy import Derivative, Symbol, sympify, SympifyError`	Print 4
204	A probability density function has two special properties: (1) the function value for any x is always **greater than** 0, . . .	A probability density function has two special properties: (1) the function value for any x is always **greater than or equal to** 0, . . .	Print 10
213	URL replacement	Anaconda (*https://www.anaconda.com/distribution/*) . . .	Print 3
226	`x, y = components(theta)`	`x, y = components(u, theta)`	Print 10