

Essential Maths and Stats for Higher Education

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Corrections as at March 2016

- p3 Last line, change 0.68 to 0.78
- p10 Ex 1.05 q3 change \$260 000 to \$440 000
- p153 Ex 14.07 q3c change to “Estimate or calculate, using the graph and/or the equations, when the two cars...”
- p193 Ex 17.01 q1g change to “Estimate when the seat is 15m above...”
- p238 Ex 19.07 q10c insert “Note: m_1 and m_2 are the gradients of the two tangents.”
- p264 Ex 20.06 q10c insert “Hard!”
- p272 Ex 21.03 q6b change t to θ
- p301 Negative acceleration: insert “(or accelerating in the ‘negative’ direction)”
- p304 Ex 24.01 q2 “Guy Fawkes Night”
- p381 Example 1: Answer line 7 should read $20x^2 + 60x$
- p556 Change contents of ‘light bulb box’ to: “The chi-squared distribution describes the variation between observed data and an ‘expected’ theoretical distribution. The left tail (see p.605) represents data that are extremely close to the expected values. The right tail represents a substantial difference between observed and expected – the tail we are usually interested in. If our calculated statistic is larger than the critical value, we infer a significant difference between observed and expected data.”

Answers

p613 Ex 9.05 q5 ans = 7; q8 ans = $\frac{-18}{5}$; q9 ans = $\frac{-5}{3}$; q10 ans = 0

p613 Ex 9.08 q2 ans = 0; q3 ans = 5; q5 ans = 5; q6 ans = -29

p613 Ex 9.09 q7 ans = $\frac{5x}{6}$; q17 ans: $\frac{x+4}{5} = 3x, x = \frac{2}{7}$

p614 Ex 9.11 q7 ans $m > 10$

p619 Ex 12.05 q3b ans should be graph 3c; q3c ans should be inverted parabola with vertex at (-2,-1); q3d ans should be inverted parabola with vertex at (-4,-3); q4d ans: $y = (x-4)^2$; q4e ans written as 4d; q4f ans written as 4e; q4g ans written as 4f; q4h ans written as 4g; q4i ans written as 4h

p630 Ex 16.03 q1 ans = 12.8m, 7 sheets

p636 Ex 19.03 q17 ans = $\frac{-4}{5\sqrt[3]{x^4}}$

p639 Ex 20.03 q1a ans = -2, 4; q1b ans: $-2 < x < 4, x > 4$; q1c ans: $x < -2$; q1d ans = 0, 4; q1e ans: $0 < x < 4$; q1f ans: $x < 0, x > 4$; q2b ans = π (and 0, 2π)

p640 Ex 20.06 q6 ans 0.0019 mm/s

p641 Ex 21.03 q2b ans = 54

p642 Ex 22.02 q4b ans = $2x^4 + 2x^3 - 2x^2 + 3x + 14$; q4c ans = $\frac{x^2}{2} + \frac{x}{2} + 3 + \frac{1}{x}$

p644 Ex 23.08 q7 ans = $\frac{(2x+1)^{10}}{20} + c$

p644 Ex 23.09 q7 ans = $\frac{1}{2}[(x^2 - 1) + \ln|x^2 - 1|] + c$

p645 Ex 24.01 q4 ans = 5.6m

p646 Ex 26.01 q5 ans = $-\frac{1}{9} - \frac{\pi}{6}$

p647 Ex 27.01 q6 ans = none

p650 Ex 27.07 q1a ans = 13; q1c ans = 32; q1d ans = 31

p652 Ex 30.01 q6 ans: P=3, Q=7