

# Errata

for the 2021 and earlier versions of  
*Advanced Mathematical Decision Making: Using Advanced Quantitative Reasoning*, 2017 edition

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## Background on the AMDM / AQR Course Materials

*Advanced Mathematical Decision Making: Using Advanced Quantitative Reasoning* is a Charles A. Dana Center resource for educators and education systems who are offering a capstone high school mathematics course.

- This 6-book set—4 volumes of teacher materials and 2 volumes of student activity sheets—helps teachers engage their students in relevant problems that emphasize quantitative literacy, statistical reasoning, mathematical modeling, and financial applications.
- These AMDM course materials build students’ capacity to use a variety of mathematical tools and approaches to model a range of situations and solve problems, preparing learners for higher education and the workplace.

For more information on the AMDM course materials and supporting professional learning resources, see the Dana Center’s web page for [Advanced Mathematical Decision Making](#). If you have questions, comments, or suggestions—please reach out via [danaweb@austin.utexas.edu](mailto:danaweb@austin.utexas.edu).

## What’s in the books

- **Student and teacher editions:** The core content—the Student Activity Sheets (SAS)—is essentially the same in the student books and the teacher books.
- **Teacher editions:** The teacher versions also include additional resources—such as suggested facilitation notes and keys to the student activity sheets, as well as unit overviews, section framing with learning outcomes, suggested pacing timelines, and lists of activity materials and related resources.

Unit I: Analyzing Numerical Data

Unit II: Probability

Unit III: Statistical Studies

Unit IV: Using Recursion in Models and Decision Making

Unit V: Using Functions in Models and Decision Making

Unit VI: Decision Making in Finance

Unit VII: Networks and Graphs

Unit VIII: Geometric and Logical Reasoning

The 2021 reprint of the 2017 edition is published in this format:

	Volume 1	Volume 2	Volume 3	Volume 4
Student	Units I, II, III, IV	Units V, VI, VII, VIII	----	----
Teacher	Units I, II	Units III, IV	Units V, VI	VII, VIII

## Timeline of AMDM editions

**2021:** In summer 2021 the Dana Center released a reprint of the 2017 edition with minor corrections

- to remove references to online AMDM communities no longer in existence and
- to review and update links

**2017:** For this new edition, the Dana Center made updates and revisions to bring the AMDM books into full alignment with the [Texas standards](#) for the mathematics course Advanced Quantitative Reasoning. In general, the Center revised portions of

- Unit II: Probability
- Unit VI: Decision Making in Finance

and added a new unit:

- Unit VIII: Geometric and Logical Reasoning.

The remaining five units remained largely the same as in the 2010 edition. For more detail, see the table below.

**2011:** Minor updates made to the 2010 original edition, noted in errata table below.

**2010:** Original publication of AMDM Units I through VII.

The AMDM project originated in a collaboration between the Dana Center and the Texas Association of Supervisors of Mathematics (TASM). The development and production of the 2010 version of the AMDM instructional materials that constitute Units I through VII of this resource were supported by the Greater Texas Foundation, based in Bryan, Texas.

## Errata documentation by book unit, and year

Location in Book	Change	Date
<b>2021 Summer</b>		
<b>Teacher Volume 1, Unit I:</b> Analyzing Numerical Data, Section A: Estimating Large Numbers, Related Resources	Removed reference to online community	2021 Summer
<b>Teacher Volume 1, Unit I:</b> Analyzing Numerical Data, Section B: Using Ratios, Related Resources	Removed reference to video and to online community	2021 Summer
<b>Teacher Volume 1, Unit I:</b> Analyzing Numerical Data, Section C: Indices Using Weighted Sums and Averages, Planner for I. C. SAS: Student Activity Sheet 10: Readability Indices, Notes for Questions 1 and 2	Replaced reference to online community resource with suggestion to use MS Word to find readability statistics.	2021 Summer

Location in Book	Change	Date
<p><b>Teacher Volume 2, Unit III:</b> Statistical Studies, Section B: Analyzing Data, Planner and Teacher version of III. B. SAS: Student Activity Sheet 5: Histograms, Questions 12, 16, 19</p> <p><b>Student Volume 1, Unit III:</b> Statistical Studies, Section B: Analyzing Data, III. B. SAS: Student Activity Sheet 5: Histograms, Questions 12, 16, 19</p>	<p>Above question 12, changed the web address for college SAT math scores to: <a href="http://www.shodor.org/interactivate/activities/Histogram/">http://www.shodor.org/interactivate/activities/Histogram/</a></p> <p>Changed related questions to match new web activity.</p>	2021 Summer
<p><b>Teacher Volume 2, Unit III:</b> Statistical Studies, Section B: Analyzing Data, III. B. SAS: Student Activity Sheet 7: Using Technology, Data Sets 6 and 8</p> <p>AND</p> <p><b>Student Volume 1, Unit III:</b> Statistical Studies, Section B: Analyzing Data, III. B. SAS: Student Activity Sheet 7: Using Technology, Data Sets 6 and 8</p>	<p>Data Set 6</p> <p>Replaced the web address with: <a href="http://www.dbwoerner.com/basketball/schools.html">http://www.dbwoerner.com/basketball/schools.html</a></p> <p>Data Set 8</p> <p>Replaced the web address in paragraph 1 with: <a href="https://www.census.gov/data/tables/time-series/demo/popest/2010s-state-total.html">https://www.census.gov/data/tables/time-series/demo/popest/2010s-state-total.html</a></p>	2021 Summer
<p><b>Teacher Volume 2, Unit III:</b> Statistical Studies, Section A: Statistical Investigations, Materials</p>	<p>Replaced web addresses: -</p> <p>Dick Thompson article: <a href="http://content.time.com/time/magazine/article/0,9171,20197,00.html">http://content.time.com/time/magazine/article/0,9171,20197,00.html</a></p> <p>Matthias R. Mehl (et al.) article: <a href="https://science.sciencemag.org/content/317/5834/82.full">https://science.sciencemag.org/content/317/5834/82.full</a></p> <p>US Food and Drug Administration (FDA) article: <a href="https://www.fda.gov/science-research/guidance-documents-including-information-sheets-and-notice/information-sheet-guidance-institutional-review-boards-irbs-clinical-investigators-and-sponsors">https://www.fda.gov/science-research/guidance-documents-including-information-sheets-and-notice/information-sheet-guidance-institutional-review-boards-irbs-clinical-investigators-and-sponsors</a></p>	2021 Summer
<p><b>Teacher Volume 2, Unit III:</b> Statistical Studies, Section A: Statistical Investigations, Planner for III. A. SAS: Student Activity Sheet 4: Sampling Design and Methods, Notes for Question 11</p>	<p>Replaced stattrek.com web address with: <a href="https://www.calculator.net/random-number-generator.html">https://www.calculator.net/random-number-generator.html</a></p> <p>Removed web address: <a href="http://randomnumbergenerator.intemodino.com/en">http://randomnumbergenerator.intemodino.com/en</a></p>	2021 Summer
<p><b>Teacher Volume 3, Unit V:</b> Using Functions in Models and Decision Making, Section B: Cyclical Functions, Planner for V. B. SAS: Student Activity Sheet 4: Length of Daylight, Notes for Question 3</p>	<p>Removed reference to online community</p>	2021 Summer

Location in Book	Change	Date
<b>Teacher Volume 3, Unit VI: Decision Making in Finance, Section B: Present Value of an Investment, Related Resources</b>	Removed web address that begins with <a href="http://www.zenwealth.com">www.zenwealth.com</a>	2021 Summer
<b>Teacher Volume 4, Unit VIII: Geometric and Logical Reasoning, Sections A, B, and C, Related Resources</b>	Removed reference to online community	2021 Summer
<b>2017 Fall</b>		
<b>Teacher Volume 1, Unit II: Probability, Section A and Section B</b> Planner and Teacher versions of II. A. SAS: Student Activity Sheets 1, 2, 3, 4 II. A. SAS: Student Activity Sheets 5, 6, 7 AND <b>Student Volume 1, Unit II: Probability, Section A and Section B</b> II. A. SAS: Student Activity Sheets 1, 2, 3, 4 II. A. SAS: Student Activity Sheets 5, 6, 7	Updates and revisions to align the AMDM books with the Texas standards for Advanced Quantitative Reasoning. Unit II: Probability Added content on: <ul style="list-style-type: none"> <li>• using two-way table to identify whether two events are independent</li> <li>• calculating conditional probabilities with tree diagrams, formulas, and area models</li> <li>• calculating compound probabilities with formulas.</li> </ul>	2017 Fall
<b>Teacher Volume 3, Unit VI: Decision Making in Finance, Section A: Future Value of an Investment Planner and Teacher versions of VI. A. SAS: Student Activity Sheet 2: What Makes Money Work for You?</b> AND <b>Student Volume 2, Unit VI: Decision Making in Finance, Section A: Future Value of an Investment VI. A. SAS: Student Activity Sheet 2: What Makes Money Work for You?</b>	Unit VI: Decision Making in Finance Added content on: <ul style="list-style-type: none"> <li>• amortization tables for investments</li> </ul>	2017 Fall

<p><b>Teacher Volume 4, Unit VIII: Geometric and Logical Reasoning</b></p> <p>AND</p> <p><b>Student Volume 2, Unit VIII: Geometric and Logical Reasoning</b></p>	<p>Added a new unit:</p> <p>Unit VIII: Geometric and Logical Reasoning</p> <p>Addresses geometric problems involving indirect measurement (including the right triangle trigonometry, the Law of Sines, and the Law of Cosines), the use of matrices to describe geometric transformations, and the use of truth tables to determine the validity of logical arguments.</p> <p>Specifically:</p> <p>Unit VIII: Section A: Inaccessible Distances</p> <ul style="list-style-type: none"> <li>• Students will apply trigonometric principles to solve problems involving distances that cannot be easily measured.</li> <li>• They will use direct and indirect measurement to study real-world problems.</li> <li>• Students will use their understanding of right triangle trigonometry and ratios and explore and apply new trigonometric rules such as the Law of Sines and the Law of Cosines to solve real-world problems.</li> <li>• While integrating accuracy, precision, significant figures, and rounding, students will explore, solve, create, apply, and evaluate these problems to better understand the world around them.</li> </ul> <p>Section B: Transformations Using Matrices</p> <ul style="list-style-type: none"> <li>• Students will apply their knowledge of matrices from prior courses to think about matrices in a different way.</li> <li>• Matrices will be used as organizers of information, and students will investigate matrices that can be used to describe geometric transformations.</li> <li>• Students will represent figures using matrices and then look at ways of determining different matrices that answer questions arising from different situations.</li> <li>• They will create and “move” their own figures using matrices, as seen in animation.</li> <li>• Optionally, freely available dynamic geometry software can be used to have students create their own live animations.</li> </ul> <p>Section C: Logical Arguments Using Truth Tables</p> <ul style="list-style-type: none"> <li>• Students use truth tables to determine and verify the validity of arguments.</li> <li>• They work with a variety of statements and arguments, which quickly become more complicated and generally more applicable.</li> <li>• Students will create their own arguments and try to validate their own and peers’ arguments.</li> </ul>	<p>2017 Fall</p>
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Location in Book	Change	Date
<b>2012 January</b>		
<b>Unit IV, Section B, Teacher version of SAS:</b> Student Activity Sheet IV.B.4: Comparing Models, Question 1	The formula in the second line of the answer should read $d_{n+1} =$ $d_n \cdot 1.10.$ The “ $n + 1$ ” should be subscript.	2012 January
<b>Unit IV, Section B, Teacher version of SAS:</b> Student Activity Sheet IV.B.4: Comparing Models, Question 6	The last term in second sequence should be to the zero power instead of one: $50 \cdot 1.10^0$	2012 January
<b>2011 August</b>		
<b>Unit I, Section C, Teacher version of SAS:</b> Student Activity Sheet I. C. 6: Final Grade Averages, Question 5	The answer <b>88.67</b> should be <b>86.67</b> .	2011 August
<b>Unit II, Section B, Teacher and student versions of SAS:</b> Student Activity Sheet II. B. 7: Stocks and Risks	The second sentence of the opening paragraph says “about of money.” It should say “ <b>amount</b> of money.”	2011 August
<b>Unit IV, Section B Planner for SAS:</b> Student Activity Sheet IV. B. 4: Comparing Models, Question 3	The teacher notes should read ( <b><u>changes in bold underline</u></b> ): “In Question 3, Derrick adds \$50 per month to the savings. Students need to decide whether the \$50 is added to the savings before the parents calculate the interest or after. Allow for discussion about this. The solution shown on the activity sheet assumes the \$50 is added to the monthly amount <b><u>after</u></b> the parents calculate the interest. If students decide to add the \$50 <b><u>before</u></b> the interest, the first process entry reads: $(200 + 50) \cdot 1.10 = \$275.$ Students might compare both methods and argue that adding the \$50 before calculating the interest is best.”	2011 August
<b>Unit IV, Section B, Teacher version of SAS:</b> Student Activity Sheet IV. B. 4: Comparing Models, Question 6	The first paragraph of the answer should read ( <b><u>changes in bold underline</u></b> ): “A recursive rule describes this situation, in which the previous amount is multiplied by 1.10, <b><u>and 50 is added to that product.</u></b> ”	2011 August
<b>Unit IV, Section D, Teacher and Student versions of SAS:</b> Student Activity Sheet IV. D .7: Modeling the Singapore Flyer, Question 1	Students are directed to “accurate draw the circle.” This should be <b>accurately</b>	2011 August

Location in Book	Change	Date
Unit IV, Section D, Teacher and student versions of SAS: Student Activity Sheet IV. D. 7: Modeling the Singapore Flyer, Question 2	In Part c, it says that the <b>inscribed angle</b> is given. This should be <b>central angle</b> .	2011 August
Unit V, Section A, Teacher and Student versions of SAS: Student Activity Sheet V. A. 3: Growth Model, Question 2	In the top row of the table, there should be a <b>0</b> in the second column for Initially Infected People instead of a 1.	2011 August
Unit V, Section C, Teacher and Student versions of SAS: Student Activity Sheet V. C. 10: Concentrations of Medicine, Question 10	The exponent in the equation should be $x - 2$ instead of $x - 1$ .	2011 August
Unit VI, Section D, Teacher and Student versions of SAS: Student Activity Sheet VI. D. 8, Making Sense of Credit, Question 4	The question originally read: "4. What percentage is the minimum payment to the new balance before interest?"  It was revised to read "What percentage is the minimum payment to the new balance"?	2011 August