Signatures to Activate (draft) MATH21A: Basic College Mathematics

**Requested by:**

- Clayford
- Montal
- Kark

**Signatures**

**Date**

2/18/12

**Departmental Review by:**

- Member: Jean Okun
  - 2/14/12
- Member: Wei Lin
  - 2/14/12
- Member: Eni Troeger
  - 2/15/12
- Member: Navtej Singh
  - 2/15/12
- Chair: Clayford
  - 2/14/12

**Division Dean:** Brian Richardson

**IEC (for SLOs):** Malin Lankerg

**Was the proposal discussed in a department meeting?** Yes

**Approved by:**

- Curriculum Committee Chair: Kathleen French
  - 2/28/12
- Faculty Senate Chairperson: Ross Langston
  - 3/6/12
- Vice-Chancellor for Academic Affairs: Richard Fulton
  - 3/7/12
- Chancellor: Doug Dykstra
  - 3/9/12

**Date Printed:** February 14, 2012
Curriculum Details

Course Record ID
705

1. Entry Type
Activate (draft)

Notes and Special Changes

The COMPASS cut off score for placement into Math 21A will be 21 or higher on the Pre-Algebra Test. This change is the recommendation based on an assessment study conducted and discussed in the discipline. This recommendation is also consistent with similar courses in the UH CC system.

2. Justification

The two-track curriculum redesign for developmental math addresses the student needs and desire to reduce the time spent in remediation. The department see Math 21A as a viable replacement for the currently offered Math 20 course in its effort to reduce the four semester coursework in developmental math sequence to three. This will provide students the opportunity to complete their developmental math coursework in at most three semesters rather than four.

3. Course Alpha

MATH

4. Course Number

21A

5. Course Title (long)

Basic College Mathematics

6. Course Title Short

Basic College Math

7. Course Credits

2

8. Course Credit Upper Range

-
Repeatable
Will default to 98

9. Course Description
This course is designed to help students review and master the basics of mathematics. Emphasis will be placed on numeration, whole numbers, fractions, mixed numbers, decimals, and ratios and proportions.

10. Course Pre-Requisites
Satisfactory math placement test score or consent of instructor.

11. Course Co-Requisites

12. Course Recommended Preparation

13. Contact Hours (lecture, lab, lecture/lab)
2 hours lecture

14. Maximum Credits Towards an AA Degree
0

15. Department
Mathematics and Business

16. Cross-Listing

17. Course Content
Chapter 1-Whole Numbers (7 sections)-2 weeks Chapter 2 Fractions and Mixed Numerals (8 sections)-2.5 weeks Chapter 3-Decimals (6 sections)-2 weeks Chapter 4 Ratio and Proportions (3 sections) 1 week Note: Chapter 1 will be reviewed to reduce the amount of time spent in Chapter 1 to allow more time in other chapters as well as
the possible inclusion of Math Study Skills units.

18. Course Competencies

19. Assessments, Tasks, and Grading

The mode of instruction is primarily discussion-problem solving where the initial portion of each class period may be utilized to discuss and clarify any questions from the preceding class meeting and/or assignment, and the remaining portion is used to discuss new material. Lectures, directed student explorations, group work, appropriate technologies, and projects will also be used as appropriate. After the completion of each unit, a review and an exam will be conducted. The student will demonstrate competency in the objectives by participating in and completing all class activities, by completing and turning in all assignments as requested, by taking unit tests, and by taking a final exam over concepts and skill covered in the entire course. Class activities, unit tests, and the final exam are to be taken in the classroom and without any references unless otherwise stipulated by the instructor. It is the students' responsibility to obtain and complete all assignments that are given in any class meeting for which the student is unable to attend. Unless permission is granted by the instructor beforehand, assignments and tests must be completed and submitted to the instructor at the specified date and time. Points will be assigned to each graded assignment, class activity, and tests. Students must pass each unit test at the 70% or higher. Retest opportunities are available. Students must pass the cumulative final exam at the 60% level or higher. Grades for the course will be assigned according to a standard grading scale (90%-100% of the total points earned is an "A" grade, etc.)

20. Auxiliary Materials and Content


21. Additional Activities outside of class and class time

Activities required at scheduled times other than class times may include: Homework, Math Lab or Testing Center.

22. Special Costs connected to the course

None. No additional or special costs are needed to teach this course.

23. What are the Student Learning Outcomes?

The student learning outcomes are: 1. Apply precise mathematical language and symbols in written and/or oral form. 2. Perform operations with whole numbers, fractions, mixed numbers, and decimal numbers. 3. Apply symbolic forms to represent, model, and analyze mathematical situations to solve problems. 4. Use algebraic techniques to analyze and solve applied problems.
24. How does the proposal connect to the college's strategic plan?

Mission Statement: "To broaden access to post-secondary education in Hawaii by providing open-door opportunities for students...," and "To specialize in the effective teaching of remedial/developmental education..." The Strategic Direction to Promote Learning and Teaching for Student Success includes "remedial instruction in basic skills."

25. Describe the staff that will be needed

No additional staff is needed. Current math faculty can teach this course.

26. Describe the facilities that will be needed, including special rooms

27. Describe any other resources that will be needed

28. How will the staff, facilities, and other resources for the course be secured?

29. Certificates

30. Connection to the AA degree

31. Connection between the Course SLOs and the College's General Education Outcomes

Draw on knowledge from the liberal arts to succeed in upper division courses.

Use research and technology skills to access information from multiple sources; use critical thinking and problem-solving skills to evaluate and synthesize information to form conclusions, ideas, and opinions.

Express ideas clearly and creatively in diverse ways through the fine and performing arts, speech and writing.

Enter and perform effectively in the work force.

Develop skills that improve personal well-being and enhance professional potential.

Use knowledge and skills to maintain and improve mental and physical well-being.

Pursue lifelong learning.
32. List any similar classes taught at outside of the UH system

33. List any similar classes taught at campuses in the UH System.

Hawaii CC's Math 1A, B, C, D series are 1 credit courses offered through the Learning Center. Kapiolani CC's Pre-college mathematics are 0 credit courses offered through the Kahikoluamea Student Success Center. Honolulu CC's Math 9 is a 5 credit course. Leeward CC's Math 18 is a 3 credit course. Kauai CC's Math 21 is a 4 credit course.

34. How, if at all, is the course intended to count in lieu of a course taught at a four-year campus.

35. How, if at all, is the course similar to upper-division courses in the UH System.

36. How does the course articulate with four-year programs (Gen Ed)?

37. List any articulations between this course and any four-year program.

End of Proposal
<table>
<thead>
<tr>
<th><strong>INSTRUCTOR:</strong></th>
<th>Clayton K. Akatsuka, Professor, Mathematics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OFFICE:</strong></td>
<td>Mana 112</td>
</tr>
<tr>
<td><strong>OFFICE HOURS:</strong></td>
<td>MWF 9:30am-10:00am, 11:15am – 11:45am, 1:15pm – 1:45pm; T, Th 9:30am - 10:00am, 12:00pm – 12:30pm; or by appointments.</td>
</tr>
<tr>
<td><strong>TELEPHONE:</strong></td>
<td>236-9279</td>
</tr>
<tr>
<td><strong>e-mail:</strong></td>
<td><a href="mailto:akatsuka@hawaii.edu">akatsuka@hawaii.edu</a></td>
</tr>
<tr>
<td><strong>EFFECTIVE DATE:</strong></td>
<td>Spring 2012</td>
</tr>
</tbody>
</table>

**WINDWARD COMMUNITY COLLEGE MISSION STATEMENT**

Windward Community College offers innovative programs in the arts and sciences and opportunities to gain knowledge and understanding of Hawai‘i and its unique heritage. With a special commitment to support the access and educational needs of Native Hawaiians, we provide O‘ahu’s Ko‘olau region and beyond with liberal arts, career and lifelong learning in a supportive and challenging environment — inspiring students to excellence.

**Disabilities Accommodation Statement**

If you have a physical, sensory, health, cognitive, or mental health disability that could limit your ability to fully participate in this class, you are encouraged to contact the Disability Specialist Counselor to discuss reasonable accommodations that will help you succeed in this class. Ann Lemke can be reached at 235-7448, lemke@hawaii.edu, or you may stop by Hale ‘Akoakoa 213 for more information.

**CATALOG DESCRIPTION**

This course is designed to help students review and master the basics of mathematics. Emphasis will be placed on numeration, whole numbers, fractions, mixed numbers, decimals, and ratios and proportions.
STUDENT LEARNING OUTCOMES

The student learning outcomes are:
1. Apply precise mathematical language and symbols in written and/or oral form.
2. Perform operations with whole numbers, fractions, mixed numbers, and decimal numbers.
3. Apply symbolic forms to represent, model, and analyze mathematical situations to solve problems.
4. Use algebraic techniques to analyze and solve applied problems.

COURSE CONTENT

Concepts or Topics

- Whole Numbers
- Fractions
- Decimals
- Ratios and Proportions
- Percents
- Equation Solving

Skills or Competencies/Responsibilities of Students. Success in this course will be enhanced by:
1. a positive, inquiring attitude towards learning mathematics;
2. setting aside adequate time for studying and working of problems;
3. reading the text carefully and making use of other learning materials whenever necessary;
4. seeking assistance from the instructor and the Math Lab personnel whenever necessary;
5. completing assignments by the designated date;
6. regular class attendance, participation and maintaining accurate class notes.

COURSE TASKS

The mode of instruction is primarily discussion-problem solving where the initial portion of each class period may be utilized to discuss and clarify any questions from the preceding class meeting and/or assignment, and the remaining portion is used to discuss new material. Lectures, directed student explorations, group work, appropriate technologies, and projects will also be used as appropriate. After the completion of each unit, a review and an exam will be conducted.
ASSESSMENT TASKS AND GRADING

The student will demonstrate competency in the objectives by participating in and completing all class activities, by completing and turning in all assignments as requested, by taking unit tests, and by taking a final exam over concepts and skill covered in the entire course. Class activities, unit tests, and the final exam are to be taken in the classroom and without any references unless otherwise stipulated by the instructor.

It is the student’s responsibility to obtain and complete all assignments that are given in any class meeting for which the student is unable to attend. Unless permission is granted by the instructor beforehand, assignments and tests must be completed and submitted to the instructor at the specified date and time.

Points will be assigned to each graded assignment, class activity, and tests as follows:
1. **Homework.** Homework sets will be graded on a 0 - 3 point scale. Assignments are due at the next class meeting to the instructor. Late homework may be accepted with grade penalty.

2. **Class Activity.** Class activities are done in class only. Class activities will be graded on a 0 - 3 point scale. There is no make-up for a missed class activity. Students must be present in class to participate.

3. **Chapter Test.** The five chapter tests are given in class at the end of each chapter. A chapter test will be 50 minutes in length and will be scored on a 100-point scale. The student must achieve a minimum of 70% of the possible points for each unit test. Without this minimum requirement, a passing grade and credit for the course are not possible.

**Retests.** After each chapter test, a chapter retest deadline will be posted. One retest is allowed without penalty for each chapter test if it is done by the posted chapter retest deadline. The better of the two test scores will count towards your grade. No retest will be given after the chapter retest deadline. Retests are arranged by appointments with your instructor.

To take a retest, all of the following must be met:
- a) All problems from the Chapter Test at the end of the chapter must be completed and turned in to the instructor.
- b) The student must meet with the instructor to review mistakes made on the first form of the test taken.
- c) Additional math activities as designated by the instructor must be completed.
- d) The retest must be taken by the designated chapter retest deadline.

4. **Final Exam.** The final exam will cover the concepts and skills in the entire course. The final exam is one hour, fifty minutes in length and will be scored on a 200-point scale. The student must achieve a minimum of 60% of the possible points for the final exam. Without this minimum requirement, a passing grade for the course is not possible.

No retesting for the final exam is available unless the 60% minimum is not met and the 70% minimum per chapter test was met. In that event, a retest of the final exam is possible, however, the maximum score is 60% of the possible points for the final exam.
Make-up. Make-up opportunity for a chapter test or final exam will be possible only upon a timely presentation of a serious and justified explanation of the student’s absence from the class test. The instructor has the right to request documentation of the student’s absence from the class and to determine if the absence from the class test is justified. A make-up test must be taken within one week of the in-class test unless otherwise specified by the instructor. **No more than one test may be taken by a student on a make-up basis.**

Course grade. If the student has achieved a minimum of 60% of the possible points for each unit test and a minimum of 50% of the possible points for the final exam, then a letter grade for the course will be assigned according to the level of achievement as provided in the table below:

<table>
<thead>
<tr>
<th>GRADE</th>
<th>DEFINITION</th>
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<tbody>
<tr>
<td>A</td>
<td>90% - 100% of the total possible points</td>
</tr>
<tr>
<td>B</td>
<td>80% - 89% of the total possible points</td>
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<tr>
<td>C</td>
<td>70% - 79% of the total possible points</td>
</tr>
<tr>
<td>Cr</td>
<td>70% - 100% of the total possible points</td>
</tr>
<tr>
<td>NC</td>
<td>Less than 70% of the total possible points</td>
</tr>
<tr>
<td>D</td>
<td>60% - 69% of the total possible points</td>
</tr>
<tr>
<td>F</td>
<td>Less than 60% of the total possible points</td>
</tr>
</tbody>
</table>

Note: Students must apply for the Cr/NC grading option at the Admissions Office. Consult the WCC Catalog for deadlines.

Note: W grade is given only when the student officially withdraws from the course at the Admissions Office. Consult the WCC Catalog for deadlines.

**LEARNING RESOURCES**

**Required Text:** Developmental Mathematics, WCC Custom edition, by Bittinger and Beecher

Although not required, a Student Solution Manual is also available.

**Activities Required at Scheduled Times Other Than Class Times**
Homework, Math Lab or TTC activities as needed.
Math Lab: Mana 103
TTC: Alakai 106

**Additional Information**

1. Grading on Homework, Class Activities or Tests. To receive full marks for problems done on any graded activity, you must show your work neatly and completely as well as provide clear written explanations when it is asked for. Partial credit may be awarded.

2. Absences. It is your responsibility to attend every class meeting. Even if you are absent, you are responsible for those topics and examples covered in class that you missed. Furthermore, you are responsible for obtaining any important announcements and assignments given during
the class you missed. If you are absent frequently or for an extended period of time, contact the instructor as soon as possible to discuss your situation. Absences and tardiness to class can have a negative impact on your success in this course.

3. Homework. For each chapter, as you read through each section, it is recommended that you write down the words, phrase or math symbols and their meanings, formulas, and properties/rules that are important for each section. It is important for you to know these.

After reading through each section carefully, try the suggested odd numbered problems in each section. The answers to the odd numbered problems are available at the back of the textbook. Do as many as you feel is necessary to help you learn and understand the material and become comfortable with the concepts and/or properties. If you have difficulty solving problems in the section, review the material in the text and your class notes. Many examples are solved. Review the solutions to these problems. If, after checking these sources and trying to find your mistakes, you are still unable to solve a problem correctly, make a note of the exercise number so that you can ask someone for help with that problem.

Mathematics is not a spectator sport. To succeed in mathematics, you must do problems. It is often necessary to practice a skill more than the instructor requires. For example, a textbook may provide 50 practice problems in a section and the instructor may assign only 25 of them. However, some students may need to do 30, 40, or all problems. If you are an accomplished athlete, musician, or dancer, you know that long hours of practice are necessary to acquire a skill. Do not cheat yourself of the practice you need to develop skills taught in this course.
## MATH 21A (60149)
Basic College Mathematics I
MWF: 10:00 am - 11:15 am
Man 114

Instructor: Clayton K. Akatsuka
Office: Mana 110
Office Phone: 236-9279

### Tentative Calendar
Spring 2009

<table>
<thead>
<tr>
<th>Jan</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
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<tr>
<td>12</td>
<td>Introduction, 1.1, 1.2, 1.3</td>
<td>13</td>
<td>14</td>
<td>1.4, 1.5, 1.6</td>
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<td>19</td>
<td>Holiday Martin Luther King, Jr. Day</td>
<td>20</td>
<td>21</td>
<td>**1, 2.1, 2.2</td>
<td>22</td>
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<tr>
<td>26</td>
<td>Chapter 1 Test</td>
<td>27</td>
<td>28</td>
<td>2.4</td>
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<table>
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<tr>
<th>Feb</th>
<th>Monday</th>
<th>Tuesday</th>
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<tr>
<td>2</td>
<td>2.6, 2.7</td>
<td>3</td>
<td>4</td>
<td>2.8</td>
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<tr>
<td>9</td>
<td>Review Chapter 2, 3.3</td>
<td>10</td>
<td>11</td>
<td>Chapter 2 Test, 3.4</td>
<td>12</td>
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<td>16*2</td>
<td>Holiday Presidents Day</td>
<td>17</td>
<td>18</td>
<td>**3, 4.1, 4.3(a)</td>
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<td>23</td>
<td>Chapter 3 Test, **4, Equations Worksheet#1</td>
<td>24</td>
<td>25</td>
<td>Review Chapter 4, Equations Worksheet#2</td>
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<tr>
<td>Mar</td>
<td>Monday</td>
<td>Tuesday</td>
<td>Wednesday</td>
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<td>Friday</td>
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<tr>
<td>2</td>
<td>Equations Worksheet#4</td>
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<td>4</td>
<td>Equations Review</td>
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<td>9</td>
<td>Equations Quiz</td>
<td>10</td>
<td>11</td>
<td>Review</td>
<td>12</td>
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</table>

*1 Last Day of Erase Period  
*2 Last Day of Official Withdrawal  
*3 Last Day of Instruction

### Office Hours:
M, W 9:30 am - 10:00 am, 11:15 am - 11:45 am, 1:15 pm - 1:45 pm;  
T, Th 9:30 am - 10:00 am, 12:00 pm - 12:30 pm;  
or by appointments.
Note: (1) Show all your work neatly. (2) Check your answers with those in the back of your textbook. If your answer is incorrect, review your work to find the error. Make the necessary correction. (3) Seek help from your instructor and/or the Math Lab. (4) Ask questions in class. (5) Complete your assignments on time.

<table>
<thead>
<tr>
<th>Section</th>
<th>Pages</th>
<th>Problems</th>
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<tbody>
<tr>
<td>1.1</td>
<td>pp. 7-8</td>
<td>#1, 3, 5, 8, 11, 14-17, 22, 30, 33, 41-47 odds.</td>
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<td>1.2</td>
<td>pp. 14-16</td>
<td>#35, 43, 45, 47, 51, 69, 75, 79, 81, 85.</td>
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<td>1.3</td>
<td>pp. 21-24</td>
<td>#37-45 odds, 91-101 odds, 111, 118.</td>
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<td>1.4</td>
<td>pp. 29-32</td>
<td>#41-47 odds, 81, 83, 97, 105, 106.</td>
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<td>1.5</td>
<td>pp. 41-44</td>
<td>#21, 23, 53, 67, 82, 114.</td>
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<td>1.6</td>
<td>pp. 47-48</td>
<td>#1, 5, 13, 15, 17, 25, 39-75 odds.</td>
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<td>1.7</td>
<td>pp. 51-52</td>
<td>#11, 21, 29, 35, 53, 67, 77, 81.</td>
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<td>**1</td>
<td>Chapter 1 Test</td>
<td>pp. 59-60 #1-25.</td>
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<tr>
<td>2.1</td>
<td>pp. 65-66</td>
<td>#1, 13, 21, 29, 37, 41, 43, 59, 70, 71.</td>
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<td>2.2</td>
<td>pp. 69-70</td>
<td>#27-73 odds.</td>
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<td>2.3</td>
<td>pp. 73-74</td>
<td>#1-75 odds, 76.</td>
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<td>2.4</td>
<td>pp. 79-82</td>
<td>#11, 21, 31, 33, 45, 49, 51, 57, 59, 65, 73, 89, 91, 93, 95, 100.</td>
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<td>2.5</td>
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<td>#11-17 odds, 49, 53, 59, 63, 67, 69, 71, 75.</td>
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<td>2.6</td>
<td>pp. 95-98</td>
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<td>pp. 103-106</td>
<td>#11, 23, 35, 37, 34, 43, 55, 63, 72, 76, 77, 83, 86, 90, 93, 96.</td>
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<td>2.8</td>
<td>pp. 109-111</td>
<td>#1, 3, 9, 15, 25, 29, 31, 35, 37, 45, 49.</td>
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<td>3.1</td>
<td>pp. 125-126</td>
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<td>3.3</td>
<td>pp. 133-134</td>
<td>#1, 11, 13, 18, 19, 25, 33, 35.</td>
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<td>pp. 139-144</td>
<td>#7, 17, 27, 39, 63, 83, 93, 95, 103, 126, 130, 135.</td>
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<td>#11, 57-73 odds, 75, 97, 99, 105.</td>
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<td>pp. 155-156</td>
<td>#1, 9, 11, 16, 22, 25, 29, 48, 51-69 odds.</td>
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<td>**3</td>
<td>Chapter 3 Test</td>
<td>pp.163-164 #1-20.</td>
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<tr>
<td>4.1</td>
<td>pp. 171-172</td>
<td>#4, 12, 20, 25, 27, 33.</td>
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<tr>
<td>4.3(a)</td>
<td>pp. 181-182</td>
<td>#1, 5, 8, 12, 17, 22.</td>
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<tr>
<td>4.3(b)</td>
<td>pp. 182-184</td>
<td>#25, 35, 41, 43, 49, 53, 54, 56, 61, 64, 69. (Answer in Fractions)</td>
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<tr>
<td>**4</td>
<td>Chapter 4 Test</td>
<td>pp. 191-192 #2, 4-6, 8-10, 12, 16, 18, 20.</td>
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</table>

Solving Equations Worksheet#1: x + a = b or x - a = b
Solving Equations Worksheet#2: ax = b or x/a = b
Solving Equations Worksheet#3: Applications
Solving Equations Worksheet#4: Review