## Study Guide

### Chapter: 3 – Similarity

At the end of **Chapter 3**, you can expect to be tested on your ability to:

- Explore dilations using “rubber bands,” as in problems 3-5, 3-18, 3-46(a), and CL 3-114.
- Identify corresponding parts on similar figures and use common ratios to find missing side lengths on figures, as in problems 3-58, 3-65, 3-80, 3-113, and CL 3-118.
- Determine if two shapes are similar. For this chapter, you should support your conjectures with informal justification, including demonstrating equal ratios between corresponding sides and finding missing angles, as in problems 3-54, 3-55, 3-69, 3-81, 3-90, CL 3-115, and CL 3-122. More formal evidence (proof), and using flowcharts to demonstrate similarity, is reserved until future chapters.
- Create if-then conditional statements, and use that logic in forming flowcharts of situations, as in problems 2-17(f), 2-26(c), 3-10, 3-23, 3-33, 3-44, 3-53, 3-68, 3-92, and CL 3-121.
- Master Checkpoint 3: Writing Equations from Multiple Representations of Linear Functions, as in problems 3-8(a), 3-32(a), 3-43, 3-77, 3-103, 3-111, and CL 3-116.

**More than half** of each test in this course is made up of material from previous chapters. Your test may also include these concepts from the previous chapter:

- From Chapter 2, use the Triangle Inequality to determine if three given side lengths could form a triangle, or to find the possible range of lengths of a third side given the lengths of the two other sides, as in problems 2-117, 3-9, 3-45, 3-66(a), and CL 3-117.
- From Chapter 2, apply the Pythagorean Theorem to find missing lengths in a diagram or contextual situation, as in problems 3-32(b), 3-57, 3-91, 3-109, CL 3-119(a) and (c).

You may also be tested these concepts from a previous algebra course:

- Proportional equations, as in problems 3-6, 3-31, and CL 3-120(c) and (d).
- Multiply binomials, as in problems 2-74, 2-95, 3-21, 3-101, and CL 3-120(a) and (b).

The following new concepts were studied, but will be assessed on a future chapter assessment. Students, like yourself, may need more time to practice these new topics.

- Formally determining if two shapes are similar using the SSS ~, AA ~, or SAS ~ conditions, as in problem 3-99.
- Use a systematic list or tree diagrams to represent the sample space for probabilistic situations, as in problems 3-56, 3-67, and 3-79.

<table>
<thead>
<tr>
<th>Math Grade Rubric</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Well Done</td>
<td>A</td>
<td>Acceptable</td>
<td>B</td>
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<td>Fully accomplishes the purpose of the task</td>
<td>• Shows full grasp and use of the central mathematical idea(s)</td>
<td>• Substantially accomplishes the purpose of the task</td>
<td>• Shows essential grasp of the central mathematical idea(s)</td>
<td>• Recorded work communicates thinking clearly using some combination of written, symbolic, or visual means</td>
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<td>Partially accomplishes the purpose of the task</td>
<td>• Shows partial but limited grasp of the central mathematical ideas(s)</td>
<td>• Recorded work may be incomplete, misdirected or not clearly presented</td>
<td>• Little or no progress toward accomplishing the purpose of the task</td>
<td>• Shows little or no grasp of the central mathematical idea(s)</td>
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<td>Revision Needed</td>
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<td>C</td>
<td>Restart</td>
<td>D</td>
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</tbody>
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**Note:** Recorded work may be incomplete, mathematically or not clearly presented, misdirected, or not clearly organized.