Fill in the blanks in these sentences with the word that fits.

1. ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ are limitations on a design.

2. ___ ___ ___ ___ ___ ___ ___ ___ includes what the design is supposed to do, related to function, aesthetics, efficiency, etc.

3. A ___ ___ ___ ___ ___ ___ ___ ___ is a decision process recognizing the need for careful compromises among competing factors.

4. ___ ___ ___ ___ ___ ___ ___ ___ must compare the solution to the criteria and constraints of the problem.

5. Identified elements and features of a product or system are the ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___.

6. ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ of a design, such as criteria, constraints, and efficiency, sometimes compete with each other.

7. Identified limitations on the design of a product or system are the ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___.

8. ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ involve time, budget, safety among other things.

9. Throughout the design process, ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ must constantly compare the solution to the criteria and constraints of the problem.

10. Time, budget and safety are almost always considered to be ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___.

11. The ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ design process is a systematic, iterative problem solving method which produces solutions to meet human wants and desires.

12. ___ ___ ___ ___ ___ ___ ___ ___ is the desired elements and features of a product or system.

13. In the example of the water tower design problem, one criterion is that the owner must fill the tower ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___.

14. When designers make compromises, the result is often a ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___.

Select your answers from the following words:
criteria  Criteria  trade-off  Constraints  engineering
<table>
<thead>
<tr>
<th>constraints</th>
<th>Criteria</th>
<th>Requirements</th>
<th>Designers</th>
<th>designers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Constraints</td>
<td>trade-off</td>
<td>constraints</td>
<td></td>
</tr>
</tbody>
</table>
Fill in the blank with the letter next to the word that best completes the sentence.

1. Time, budget and safety are almost always considered to be a. Constraints
   __________.

2. __________ are limitations on a design. b. criteria

3. __________ must compare the solution to the criteria and constraints of the problem. c. Constraints

4. __________ involve time, budget, safety among other things. d. constraints

5. __________ is the desired elements and features of a product or system. e. designers

6. A __________ is a decision process recognizing the need for careful compromises among competing factors. f. constraints

7. Throughout the design process, __________ must constantly compare the solution to the criteria and constraints of the problem. g. Requirements

8. __________ includes what the design is supposed to do, related to function, aesthetics, efficiency, etc. h. Criteria

9. In the example of the water tower design problem, one criterion is that the owner must fill the tower __________. i. Designers

10. Identified limitations on the design of a product or system are the __________. j. engineering

11. When designers make compromises, the result is often a __________. k. trade-off

12. The __________ design process is a systematic, iterative problem solving method which produces solutions to meet human wants and desires. l. completely

13. Identified elements and features of a product or system are the __________. m. trade-off

14. __________ of a design, such as criteria, constraints, and efficiency, sometimes compete with each other. n. Criteria
Crossword Puzzle - 4.3.1 Criteria and Constraints

Fill in the crossword puzzle by using the clues.

Across
1. Identified elements and features of a product or system are the ___ ___ ___ ___ ___ ___ ___ ___.
2. ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ are limitations on a design.

3. ___ ___ ___ ___ ___ ___ ___ ___ ___ are limitations on a design.
4. ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ of a design, such as criteria, constraints, and efficiency, sometimes compete with each other.

5. A ___ ___ ___ ___ ___ ___ ___ ___ is a decision process recognizing the need for careful compromises among competing factors.

6. Identified limitations on the design of a product or system are the ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___.

7. Time, budget and safety are almost always considered to be ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___.

**Down**

1. ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ must compare the solution to the criteria and constraints of the problem.

2. The ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ design process is a systematic, iterative problem solving method which produces solutions to meet human wants and desires.

3. ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ includes what the design is supposed to do, related to function, aesthetics, efficiency, etc.

4. Throughout the design process, ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ must constantly compare the solution to the criteria and constraints of the problem.

5. ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ is the desired elements and features of a product or system.

6. ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ involve time, budget, safety among other things.

7. In the example of the water tower design problem, one criterion is that the owner must fill the tower ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___.

8. When designers make compromises, the result is often a ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___.

**Select your answers from the following words:**

- engineering
- Criteria
- Constraints
- Designers
- designers
- Constraints
- constraints
- Criteria
- Requirements
- trade-off
- completely
- constraints
- criteria
- trade-off