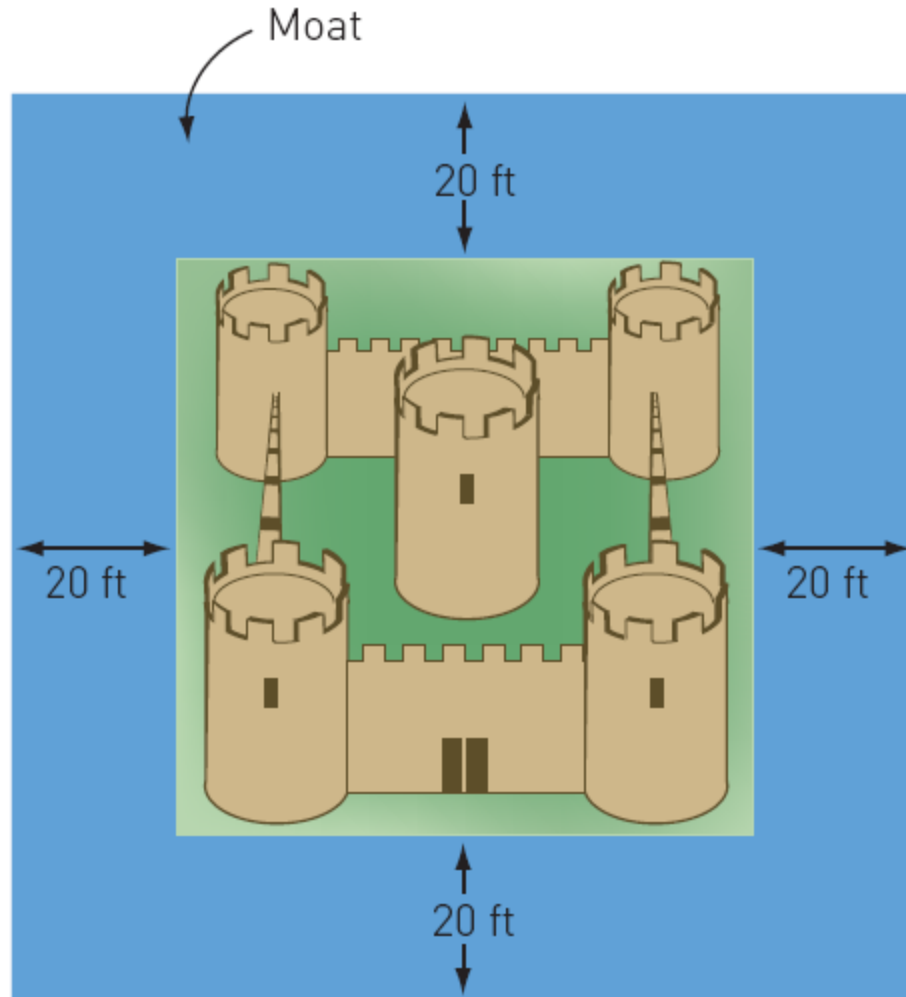


Story 2. Damsel in Distress



Long ago, knights in shining armor battled dragons and rescued damsels in distress on a daily basis. Although it is not often stressed in many stories of chivalry, the rescue often involved logical thinking and creative problem solving by the damsel. Here then is a typical knightly encounter.

Once upon a time, a notorious knight captured a damsel and imprisoned her in a castle surrounded by a square moat that was infested with extraordinarily hungry alligators. The moat was 20 feet across, and no drawbridge existed because after depositing the damsel in the castle, the evil knight had taken it with him (giving his horse one major hernia).

After a time, a good knight rode up and said, “Hail, sweet damsel, for I am here, and thou art there. Now what are we going to do?”

The knight, though good, was not too bright and consequently paced back and forth along the moat looking anxiously at the alligators and trying feebly to think of a plan. While doing so, he stumbled upon two sturdy beams of wood suitable for walking across but lacking sufficient length. Alas, the moat was 20 feet across, but the beams were each only 19 feet long and 8 inches wide. He tried to stretch them and then tried to think. Neither effort proved successful. He had no nails, screws, saws, Superglue, or any other method of joining the two beams to extend their length.

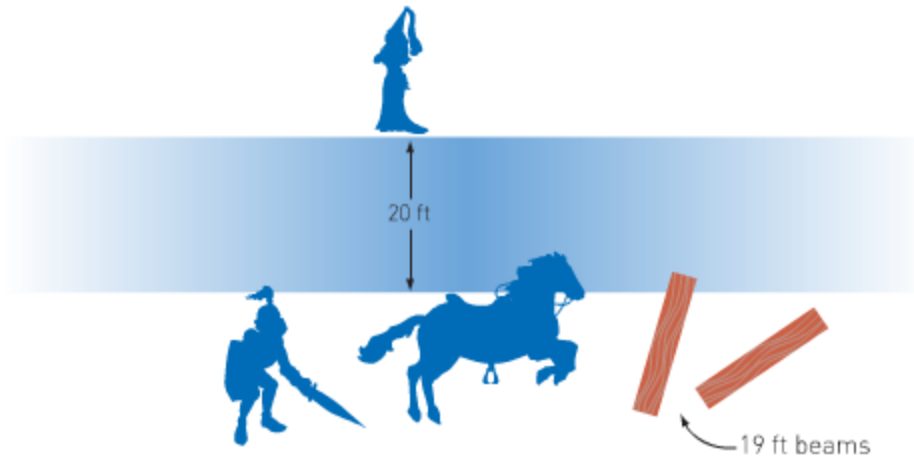
What to do? What to do? Fortunately, the damsel, after a suitable time to allow the good knight to attempt to solve the puzzle on his own, called to the knight and gave him a few hints that enabled him to rescue her. What was the maiden’s suggestion?

This story from medieval times foreshadows our journey into the geometric and the visual.

Story 2. Damsel in Distress

Nudges:

- Thinking about variations on a situation can shed light on which features are essential and which are not. In this case we might consider a variation in which the damsel in distress is on the other side of a 20-foot river rather than surrounded by a square moat. Unfortunately for the maiden, if she were separated from bliss by a river, she would go blissless, because the two 19-foot beams, in the absence of tools, would still not enable the knight to rescue her. Could the square shape of the moat come into play in the solution?



Story 2. Damsel in Distress

Nudges:

- Looking at extremes is a potent technique of analysis in many situations and may be helpful here. The extremes, either geometrical ones as in this situation or conceptual ones in other situations, frequently reveal features we might have otherwise overlooked.

