

## 25—Soccer Abroad

<sup>1</sup>Micah and Steven are going to Romania with their soccer team.

<sup>2</sup>Romania is a country in Eastern Europe. <sup>3</sup>Coach Kim gave the team the airline regulations for the size and weight of their luggage (shown below). <sup>4</sup>He warned, "You must follow these rules or you'll have to pay a lot of extra money. <sup>5</sup>You can bring one carry-on suitcase to take inside the plane and one larger suitcase to check in. <sup>6</sup>Don't bring anything else!"

<sup>7</sup>Steven said, "I don't get the 62 inches linear dimension rule."

<sup>8</sup>Coach explained, "Add length plus width plus height and make sure your sum is no more than 62 inches."

<sup>9</sup>Micah asked, "Instead of adding,

why don't they multiply the dimensions to get the volume and give people a list with volume restrictions?"

<sup>10</sup>Coach replied, "Micah, I have no idea—just follow the rules."

<sup>11</sup>Micah has a carry-on suitcase that measures 14" x 9" x 22" and weighs 21 lbs after being packed.

<sup>12</sup>The bigger suitcase that he wants to check in measures 7" x 24" x 32" and weighs 75 lbs after being packed.

<sup>13</sup>Steven went shopping for a suitcase whose linear measures had a sum closest to 62", but whose dimensions multiplied to the biggest volume possible. <sup>14</sup>His smaller carry-on suitcase measured 21" x 13" x 9". <sup>15</sup>It weighed 10 lbs when packed.

### Airline Baggage Regulations

1 carry-on suitcase 22" x 14" x 9"  
(must weigh less than 20 lbs)

Check-in items: 1 suitcase with linear dimensions, length + width + height no more than 62". (Items between 62" and 80" will be charged \$80 extra.)

Check-in items must weigh no more than 70 lbs. (Items that weigh more than 70 lbs up to 100 lbs will be charged \$110 extra.) Items weighing more than 100 lbs are not allowed.

1 in. = 2.54 cm

1 cm = .39 in.

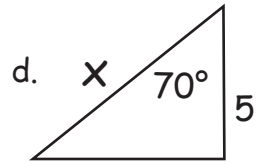
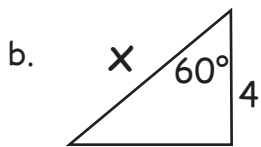
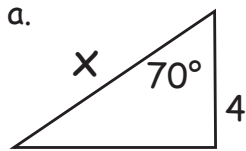
1 lb = .454 kg

1 kg = 2.2 lb

## Questions


- In the diagram Elijah drew, the length (x) of the slide is the \_\_\_\_\_ of the right triangle.
  - hypotenuse side
  - adjacent side
  - opposite side
  - smallest side
- In relationship to the  $60^\circ$  angle, the length of the ladder shows
  - the adjacent side.
  - the hypotenuse side.
  - the opposite side.
  - none of these.
- Which of the following formulas should Elijah use to find the length of the slide?
  - $\sin 60^\circ = \frac{4}{x}$
  - $\cos 60^\circ = \frac{x}{4}$
  - $\cos 60^\circ = \frac{4}{x}$
  - $\sin 60^\circ = \frac{x}{4}$

- Which of the following is the design Latarsha wants to use for the slide?



Give the number of the sentence that provides the best evidence for the answer. \_\_\_\_\_

- Find the length of the slide using Latarsha's design. \_\_\_\_\_ Show your work.

-  If the ladder is 4 feet, the hypotenuse is x, and the angle between them is  $60^\circ$ , which of the following is the same as  $\cos 60^\circ = \frac{4}{x}$ ?
  - $\sin 30^\circ = \frac{4}{x}$
  - $\sin 30^\circ = \frac{x}{4}$
  - $\tan 60^\circ = \frac{4}{x}$
  - $\cos 30^\circ = \frac{x}{4}$

