Name _____ Date _____ Class _____
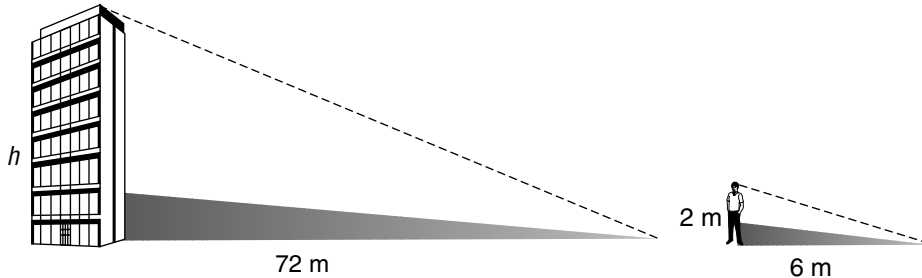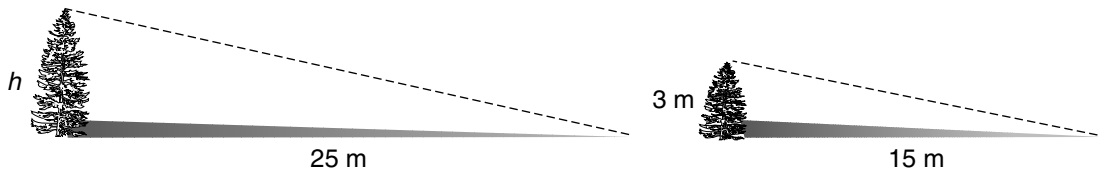
Practice B

Indirect Measurement

Write the correct answer.

1. Use similar triangles to find the height of the building. _____

h   72 m   2 m   6 m

2. Use similar triangles to find the height of the taller tree. _____

h   25 m   3 m   15 m

3. A lamppost casts a shadow that is 35 yards long. A 3-foot-tall mailbox casts a shadow that is 5 yards long. How tall is the lamppost?

_____

4. A 6-foot-tall scarecrow in a farmer's field casts a shadow that is 21 feet long. A dog standing next to the scarecrow is 2 feet tall. How long is the dog's shadow?

_____

5. A building casts a shadow that is 348 meters long. At the same time, a person who is 2 meters tall casts a shadow that is 6 meters long. How tall is the building?

_____

6. On a sunny day, a tree casts a shadow that is 146 feet long. At the same time, a person who is 5.6 feet tall standing beside the tree casts a shadow that is 11.2 feet long. How tall is the tree?

_____

7. In the early afternoon, a tree casts a shadow that is 2 feet long. A 4.2-foot-tall boy standing next to the tree casts a shadow that is 0.7 feet long. How tall is the tree?

_____

8. Steve's pet parakeet is 100 mm tall. It casts a shadow that is 250 mm long. A cockatiel sitting next to the parakeet casts a shadow that is 450 mm long. How tall is the cockatiel?

_____

Holt Mathematics

Solve each of the problems below and circle your answer.
Transfer the matching letters, in order, on to the blanks to solve
the riddle.

1. A small triangle has a hypotenuse of 5, and sides of 3 and 4.
   A larger, similar, triangle has a hypotenuse of 30. Find the
   lengths of the other two sides of the larger triangle.

   K 25   (**G**) 24   **F** 12

   W 15   **S** 20   (**I**) 18

2. A large parallelogram has angles of 120 degrees and 60
   degrees. What are the corresponding angles of a smaller, similar
   parallelogram?

   (**A**) 120   **V** 90   **R** 180

   P 30   **E** 360   (**N**) 60

3. Alok went to the photography store to develop some film. He
   has three choices of sizes for his prints. He thinks that two of
   the sizes make similar rectangles. Which size does *not* make a
   rectangle similar to the other two?

   M 4 by 6   (**T**) 8 by 10   **B** 8 by 12

What kind of ant can break a picnic table with one blow?

A   G   I   A   N   T
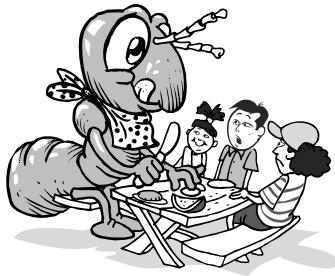
35   **Holt Mathematics**

Write the correct answer.

1. Use similar triangles to find the height of the lamppost. ___ *h* = 10 feet

2. Use similar triangles to find the height of the man. ___ *h* = 6 feet

3. A 3-foot-tall boy looks into a mirror at
   the county fair. The mirror makes a
   person appear shorter. The boy
   appears to be 1 foot tall in the mirror.
   If a man appears to be 2 feet tall in
   the mirror, what is his actual height?

   6 feet

4. On a sunny day, a carnation casts a
   shadow that is 20 inches long. At the
   same time, a 3-inch-tall tulip casts a
   shadow that is 12 inches long. How
   tall is the carnation?

   5 inches

5. A bicycle casts a shadow that is 8
   feet long. At the same time, a girl
   who is 5 feet tall casts a shadow that
   is 10 feet long. How tall is the
   bicycle?

   4 feet

6. A sand castle casts a shadow that is
   5 inches long. A 15-inch-tall bucket
   sitting next to the sand castle casts a
   shadow that is 3 inches long. How
   tall is the sand castle?

   25 inches

7. Through a magnifying glass, a
   2-centimeter-long bug looks like it is
   12 centimeters long. How long would
   a 3-centimeter bug look in that same
   magnifying glass?

   18 cm

8. In the late afternoon, a wagon casts
   a shadow that is 15 feet long. A boy
   pulling the wagon who is 4 feet tall
   casts a shadow that is 20 feet long.
   How tall is the wagon?

   3 feet

36   **Holt Mathematics**

Write the correct answer.

1. Use similar triangles to find the height of the building. ___ *h* = 24 m

2. Use similar triangles to find the height of the taller tree. ___ 5 meters

3. A lamppost casts a shadow that is
   35 yards long. A 3-foot-tall mailbox
   casts a shadow that is 5 yards long.
   How tall is the lamppost?

   21 feet

4. A 6-foot-tall scarecrow in a farmer's
   field casts a shadow that is 21 feet
   long. A dog standing next to the
   scarecrow is 2 feet tall. How long is
   the dog's shadow?

   7 feet

5. A building casts a shadow that is
   348 meters long. At the same time, a
   person who is 2 meters tall casts
   a shadow that is 6 meters long.
   How tall is the building?

   116 meters

6. On a sunny day, a tree casts a
   shadow that is 146 feet long. At the
   same time, a person who is 5.6 feet
   tall standing beside the tree casts a
   shadow that is 11.2 feet long. How
   tall is the tree?

   73 feet

7. In the early afternoon, a tree casts
   a shadow that is 2 feet long.
   A 4.2-foot-tall boy standing next
   to the tree casts a shadow that is
   0.7 feet long. How tall is the tree?

   12 feet

8. Steve's pet parakeet is 100 mm tall.
   It casts a shadow that is 250 mm
   long. A cockatiel sitting next to the
   parakeet casts a shadow that is 450
   mm long. How tall is the cockatiel?

   180 millimeters

37   **Holt Mathematics**

Write the correct answer.

1. Use similar triangles to find the height of the tower. ___ *h* = 29.76 yd

2. Use similar triangles to find the height of the man. ___ *h* = 5.4 feet

3. On a sunny day, a 6.5-foot-tall ladder
   casts a shadow that is 19.5 feet long.
   A man who is 6.2 feet tall is painting
   next to the ladder. How long is his
   shadow?

   18.6 feet

4. A building casts a shadow that is
   1,125 meters long. A woman standing
   next to the building casts a shadow
   that is 6.25 meters long. She is 2.5
   meters tall. How tall is the building?

   450 meters

5. Brian, who is twice as tall as Cole, is
   6.5 feet tall. Cole casts a shadow
   that is 22.75 feet long. If Brian is
   standing next to Cole, how long is
   Brian's shadow?

   45.5 feet

6. A 4.5-foot-tall boy stands so the top
   of his shadow is even with the top of
   a flagpole's shadow. If the flagpole's
   shadow is 34 feet long, and the boy
   is standing 25 feet away from the
   flagpole, how tall is the flagpole?

   17 feet

7. A mother giraffe is 18.7 feet tall. Her
   baby is 5.25 feet tall. The baby
   giraffe casts a shadow that is 35.7
   feet long. How long is the mother
   giraffe's shadow?

   127.16 feet

8. A shorter flagpole casts a shadow
   15.3 feet shorter than the shadow of
   a longer pole. The taller pole is 26.5
   feet tall and casts a shadow 47.7 feet
   long. How tall is the shorter pole?

   18 feet

38   **Holt Mathematics**