COMPLETE MathSmart® Grade 7

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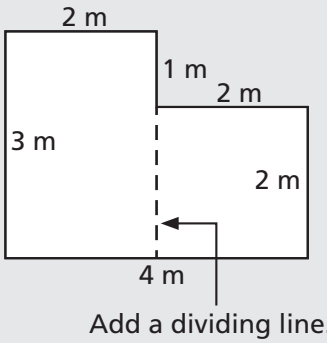
SAMPLE

8 Perimeter and Area

- solving word problems involving perimeter and area

Try It

The dimensions of a backyard deck are given in the diagram below. What is the area of the deck?



Area:

□ + □

= □

The area of the deck is □ m^2.

Read This

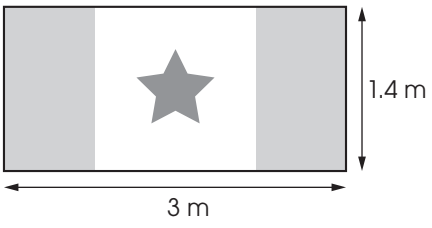
To find the area of a composite shape, add lines to divide it into squares, triangles, parallelograms, or trapezoids. Then find their areas and add.

Solve the problems. Show your work.

① Read the question above again. How many metres of fencing is needed to enclose the deck?

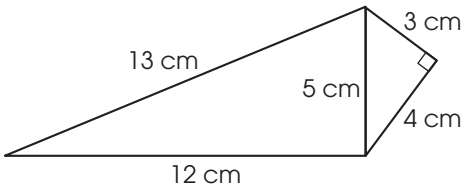
② The design of a flag is a star on a white square between two red rectangles of the same size.

a. What is the perimeter of the flag?



b. What are the areas of the quadrilaterals on the flag?

③ Find the perimeter and area of the shape.



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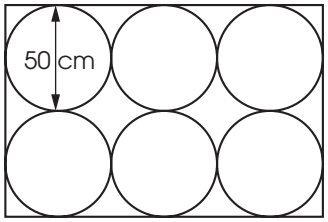
④ 6 circles each with a diameter of 50 cm are drawn in a rectangle as shown.



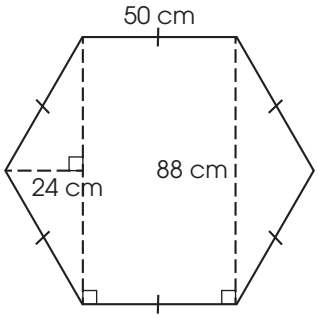
a. What are the length and width of the rectangle?

b. What are the perimeter and area of the rectangle?

A diameter is a straight line that joins two points on a circle and passes through the centre.

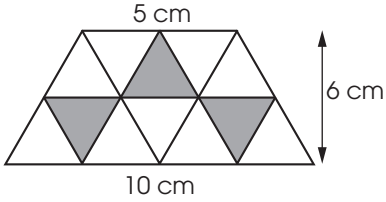
⑤ A road sign is in the shape of a regular hexagon.

a. What is its perimeter?

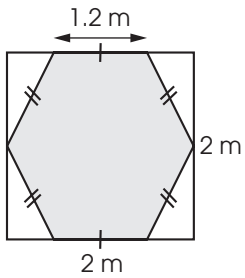


b. What is its area?

⑥ The given pattern is part of a quilt design made up of congruent triangles. Determine the total area of the shaded triangles.



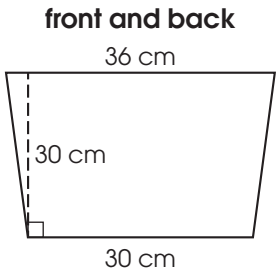
⑦ A carpet contains the hexagonal design shown. Determine the area of the shaded hexagon.



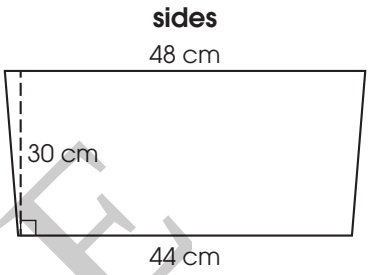
SAMPLE

⑧ Tony measured his recycling bin. The front, back, and sides are all in the shape of a trapezoid.

a. Find the total area of its front and back.

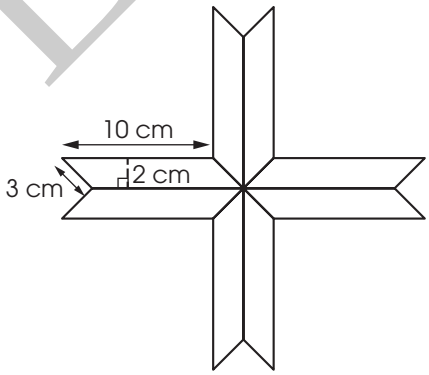


b. Find the total area of its sides.



⑨ The design of a quilt is made up of identical parallelograms.

a. How much fabric is needed to make the design?



b. How much lace trimming is needed to go around the design?

⑩ A triangle with a base of 10 cm has the same area as a square with sides of 5 cm. What is the height of the triangle?

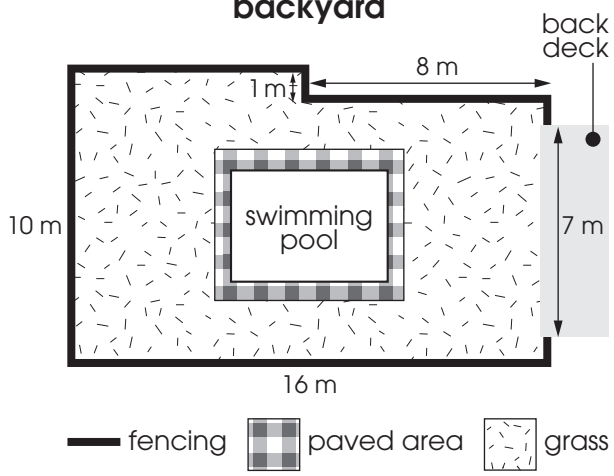
Sketch the shapes to help you.

SAMPLE

Adam and Nadine have bought a house. The diagrams below show the dimensions of the backyard and the living room. Study the diagrams carefully and solve the problems. Show your work.

⑪

backyard



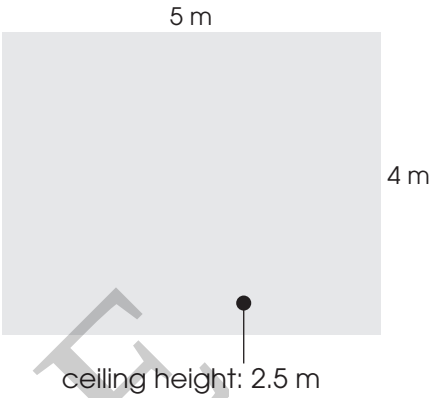
a. The backyard is enclosed by fencing which cost \$15/m. How much did the fencing cost?

b. The swimming pool is 5 m by 7 m. The paved area is 1 m wide. What is the area of the paved area?

c. The backyard is covered with grass sod which cost \$12/m^2. How much did the sod cost?

⑫

living room



a. Adam and Nadine want to renovate their living room. If the whole floor is to be carpeted and it costs \$70/m^2, how much will it cost in total?

b. They also want to paint the walls and ceiling of the living room. The paint costs \$8.99/L and 1 L covers 5 m^2. If the windows occupy 7 m^2, how much will the paint cost? (Round to the nearest cent.)

SAMPLE