Helping With Math

Area of Squares and Rectangles

Suitable for students **aged 8-10**

This pack is suitable for learners aged 8 to 10 years old or 4th to 5th graders (USA). The content covers fact files and relevant basic and advanced activities involving area of squares and rectangles.

- The **area** of a two-dimensional shape is the space occupied by it.

- Some synonymous terms for area are space and region.

- Area is measured in square units such as square feet, square meters, acres, etc.
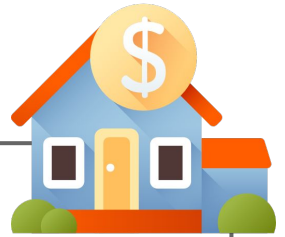
Why do we need to study area of squares and rectangles? Refer to the word problem below.

Claire bought a lot for her dream commercial building. The dimensions of the lot is 120 feet and 90 feet. What is the area of the given lot?
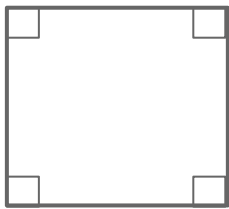
SOLD

QUADRILATERALS: A REVIEW

QUADRILATERALS

- "Quad" means four and "lateral" means side
- It is a 2-dimensional figure
- It is a closed-flat shape
- It has four edges and four straight sides
- The types of quadrilaterals are square, rectangle, rhombus, parallelogram, kite, trapezoid/trapezium.
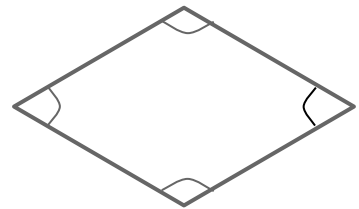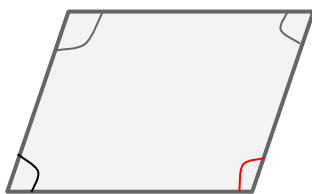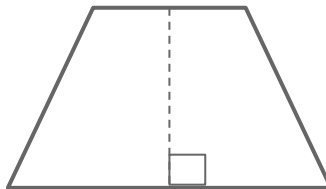
Types of Quadrilaterals

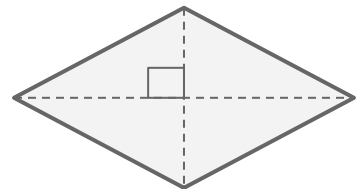|		
Square	Rectangle	Rhombus
Parallelogram	Trapezoid	Kite

FORMULA

Area of square	Area of rectangle
A = s x s	A = lw

Yvonne is a real estate agent. Currently, she is trying to sell two house and lot properties. **The smaller property is a square-shaped lot whose side measures 16 meters while the bigger one is rectangular in shape with length equal to 32 m and width equal to 25 m.** Compute for the lot area of the two properties.

Since the lot is square in shape, we just need to multiply 16 m to itself to get the area. So,

A = 16 m x 16 m = 256 square meters.
The lot area of the smaller property is 256 square meters.

Since the lot is a rectangular shape, we just need to multiply its length and width. So,

A = 32 m x 25 m = 800 square meters.
The lot area of the bigger property is 800 square meters.

TABLE OF ACTIVITIES

TOWNHOUSE FOR SALE

These Townhouses are for sale. Complete their labels by computing for their lot areas. Note that their lots are square in shape.

Townhouse A
Measurement of lot's side is 60 ft.
Lot area: ?

Townhouse B
Measurement of lot's side is 28 m.
Lot area: ?

Townhouse C
Measurement of lot's side is 85 ft.
Lot area: ?

Townhouse D
Measurement of lot's side is 37 m.
Lot area: ?

YVONNE: THE REAL ESTATE AGENT

Help Yvonne calculate her sales once you were able to solve for the area of the following land properties.

Transaction 1:
- A square lot whose side measures 95 ft.
- Price: $ 0.3/sq. ft.

Write the total sales here:

_____

Transaction 2:
- A square lot whose side measures 78 m.
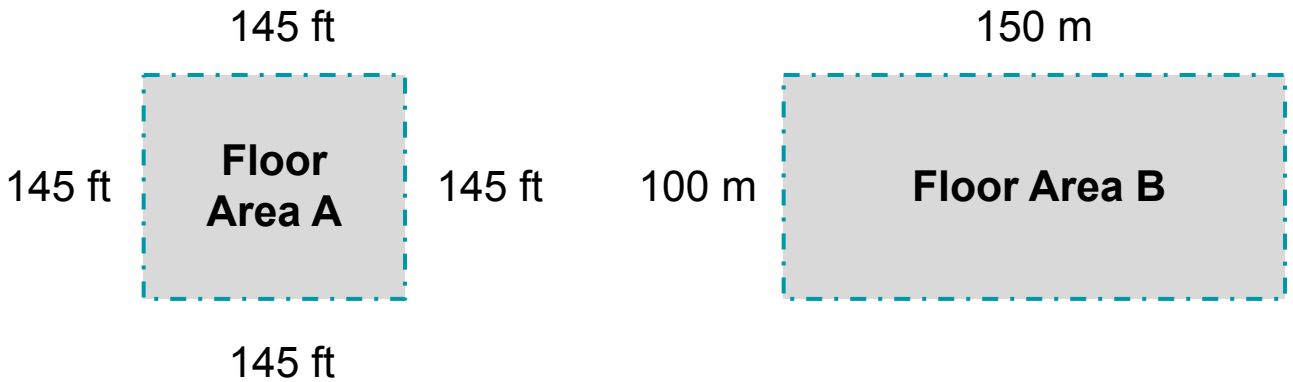- Price: $ 1.14/sq. m.

Transaction 3:
- A square lot whose side measures 83 ft.
- Price: $ 0.3/sq. ft.

LOT TO BUY, LOT TO SOLVE

Since an ocular visit is not possible because of a bad weather, Yvonne showed her customer a sketch of the house floor area she is selling. Help Yvonne provide the floor area to her customer.
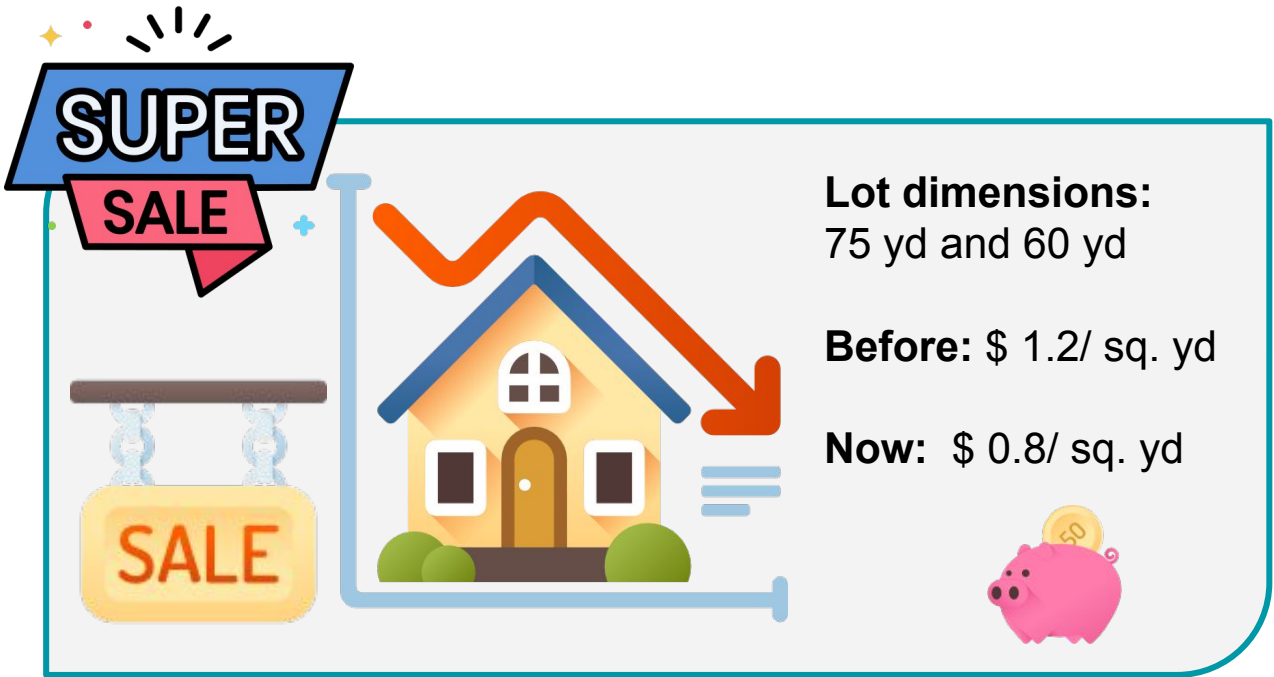
145 ft

145 ft | **Floor Area A** | 145 ft

145 ft

150 m

100 m | **Floor Area B**

Solution:

Bonus question: Compute for the perimeter.

SALE PROMO

Look at the promo sale flyer below. Use your understanding of area to compute the discounted price of the real estate property.
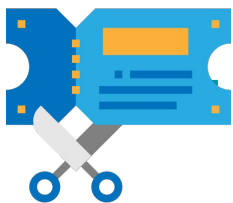
SUPER

SALE

SALE

Lot dimensions:
75 yd and 60 yd

Before: $ 1.2/ sq. yd
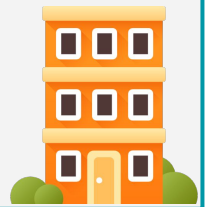
Now: $ 0.8/ sq. yd

Solution:

OUR REAL ESTATE

G4
Basic

You may ask an adult to help you on this activity. Don't you know that your own house is a real estate property? See the instructions below as your guide.

1. Create a sketch of your house floor plan. Ask an adult to help you in getting the accurate dimension of it (use feet as a unit). Make sure to indicate proper labels of the length and width.

2. If your house will be sold at $ 3.2 per square feet, how much would it totally cost? Show your solutions below.

Mr. Webber wants to build a commercial building. He is having a problem in budgeting his finances. Help him overcome it using your knowledge about area.
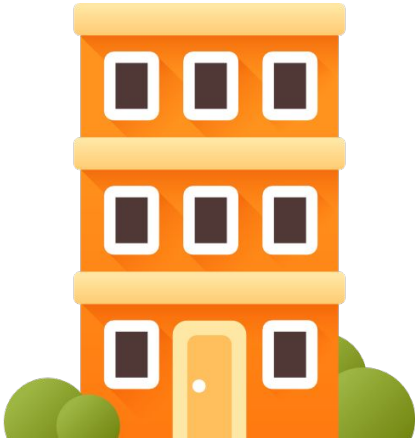
1. The floor of the commercial building is 192 ft by 174 ft. Calculate the area.

2. How many four square foot-tiles are needed to cover the floor area?

3. If each tile costs $ 9, how much budget should be allotted for it?

Wanna buy some real estate properties from HWM Company? Refer to the given below. Solve each problem.

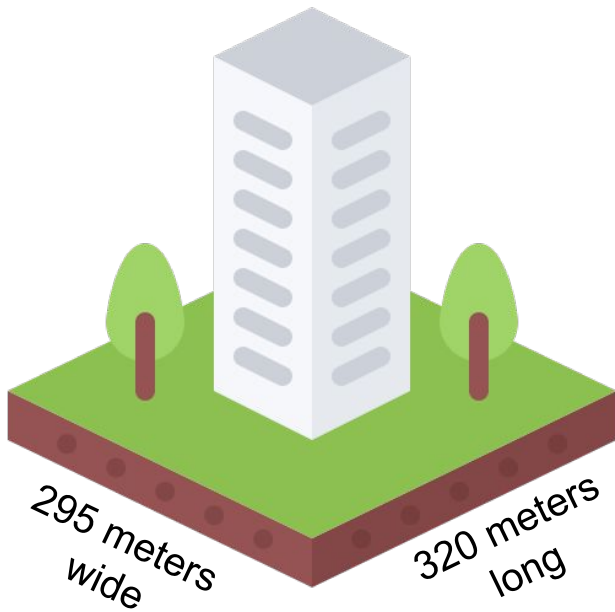1. The lot area of a particular land is one acre. If each square foot costs $ 2.3, how much should a buyer pay?

2. Derek got $ 450, 000 from his father. He wants to invest the money in real estate properties. A piece of land whose dimensions are 317 m and 224 m is for sale. If the seller is pricing it for $ 3.5 per square meter, is Derek's money enough to buy it? Why or why not?
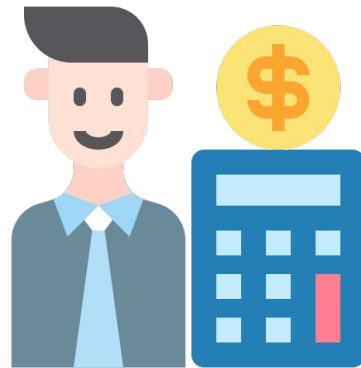
HOW MUCH IS THE DOWN PAYMENT?

Finn has to pay a 50% down payment for the property that he is about to obtain. Can you help him calculate the exact amount?

Price: $ 8 per square meters.

295 meters wide

320 meters long

MONTHLY AMORTIZATION

Your Dad purchased a property in the nearby city. He is a little bit confused on the amount of monthly amortization that he is going to pay. Help him out.

The area is 380 by 345 square feet. The price of the property is $ 8 per square feet. A $ 450, 000 down payment was made. Construct a break down of the remaining balance that is payable for 6 months.
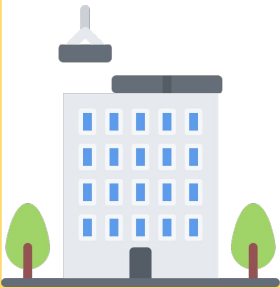
Month	Amount of Amortization	Balance
1		
2		
3		
4		
5		
6		

Addison is having confusion of which property will cost her more. Assist her to come up with a desired choice.

1. A square lot whose side measures 195 meters. The price is $18 per square meter.

2. A rectangular lot whose dimensions are 20000 centimeters and 10000 centimeters The price is $13 per square meter.

Which one is more expensive?

ANSWER GUIDE

Activity 1

Townhouse A: 3600 sq. ft   Townhouse B: 784 sq. m.
Townhouse C: 7225 sq. ft.   Townhouse D: 1369 sq. m.

Activity 2

Transaction 1: $ 2, 707.5   Transaction 2: $ 6935. 76
Transaction 3: $ 2, 066.7   Total sales: $ 11, 709. 96

Activity 3

Floor Area A: 21, 025 sq. ft.   Floor Area B: 15, 000 sq. m.
Bonus: 480 ft and 500 m.

Activity 4

Before: $ 5400 Now: $ 3600   Discount: $ 5400 - $ 3600 = $ 1800

Activity 5

Answers may vary.

Activity 6

1. 33, 408 sq. ft.   2. 8, 352 tiles   3. $ 75, 168

ANSWER GUIDE

Activity 7

1. $ 100, 188   2. Yes, because the total cost of the property is $ 248, 528. Derek still has enough money to buy it.

Activity 8

The total price of the property is $ 755, 200. If Finn is about to settle the 50% down payment, he needs $ 377, 600.

Activity 9

Area: 131, 100 sq, ft,
Total price: $ 1, 048, 800
Down payment: $ 450, 000
Balance: $ 598, 800
Monthly amortization: $ 99, 800
1st month balance: $ 499, 000   2nd month balance: $ 399, 200
3rd month balance: $ 299, 400   4th month balance: $ 199, 600
5th month balance: $ 99, 800   6th month balance: $ 0

Activity 10

1. $ 684, 450   2. $ 260, 000.
The second property is more expensive.

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