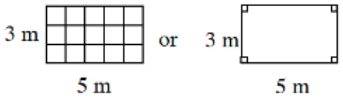
CPM 1.1.5 Homework Help

The **area of a rectangle** is found by multiplying the lengths of the base and height. See the examples at right.

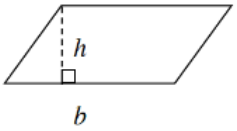
$$A = b \cdot h$$



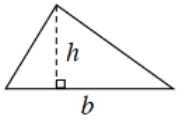
Area = $5 \cdot 3 = 15$ m^2 (square meters)

The **area of a parallelogram** is equal to the area of a rectangle with the same base and height. If the base of the parallelogram is length b and the height is length h, then the area of the parallelogram is:

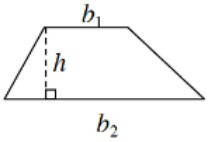
$$A = b \cdot h$$



The **area of a triangle** is half the area of a parallelogram with the same base and height. If the base of the triangle is length b and the height length h, then the area of the triangle is: $A = \frac{1}{2} b \cdot h$



Finally, the **area of a trapezoid** is found by averaging the two bases and multiplying by the height. If the trapezoid has bases b_1 and b_2 and height h, then the area is: $A = \frac{1}{2}(b_1 + b_2)h$



Show Lessons

1-45. Copy the rows of equations below and write what you predict will be the next five rows in the sequence.

$1 \cdot 9 + 2 = 11$

$12 \cdot 9 + 3 = 111$

$123 \cdot 9 + 4 = 1111$

$1234 \cdot 9 + 5 = 11111$

a. What patterns do you see?
Write your answer in complete sentences.

Step 1 (a):

Look at the equations in separate parts, then compare each row.

Step 2 (a):

In complete sentences, write about the patterns that you see from one row to the next.

Answer (a):

Added number increases by 1, first factor in the multiplication adds another digit, the next consecutive number, answers constantly add a digit of one as they increase.

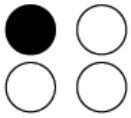
12345 · 9 + 6 = 111111
123456 · 9 + 7 = 1111111
1234567 · 9 + 8 = 11111111
12345678 · 9 + 9 = 111111111
123456789 · 9 + 10 = 1111111111

b. Use a calculator to discover whether your predictions were correct. If they were not correct, look at the pattern again and figure out how it is changing.

Show Lessons

1-46. Look at the representations shown in the Math Notes box for this lesson ("Representations of Portions"). Copy the diagrams below and write a fraction and a percent for the shaded portion of each one.

a.



b.

Hint (a):

A fraction is a number that represents a part of the whole. How many parts are shaded and how many total parts are there?

Hint 2 (a):

The shaded pieces make up the numerator while the total number of pieces makes up the denominator.

Partial Answer (a):

Fraction : $\frac{1}{4}$

More Help (a):

To convert from fraction to percent, use standard long division to get the decimal form, and then multiply by 100 or shift the decimal point twice to the right.

For example,

$\frac{3}{20} \rightarrow 0.15 \rightarrow 15$ percent

Partial Answer (a):

Percentage: 25%

Hint (b):

Think of each triangle astwo pieces. Then use the method from part (a).

c.

Hint (c):

See parts (a) and (b).

b. One triangle is 100 percent so one and a half triangles are 150%

The fraction would be 1 and ½.

c. The fraction would be ⅔.

To find the percent, divide 2 ÷ 3 to get 0.6666 which rounds to 0.67. Then multiply 0.67 by 100 to get 67 percent!

Show Lessons

1-47. Represent each of the fractions below both with a diagram and with words.

a. $\frac{2}{3}$

Hint (a):

The denominator (below the fraction bar) shows how many sections there are in the diagram. The numerator (above the fraction bar) shows how many of those sections are filled in.

Step 1 (a):

Draw a shape.

Step 2 (a):

Divide the shape into equal sections. Since the denominator is 3, divide the shape into 3 sections of equal sizes.

Step 3 (a):

Since the numerator is 2, fill in 2 of those 3 sections you created.

b. $1\frac{1}{8}$

Hint (b):

Read the number aloud. One AND one eighth means that you have one whole diagram and one eighth of another. Now try drawing your own diagram.

c. $\frac{6}{9}$

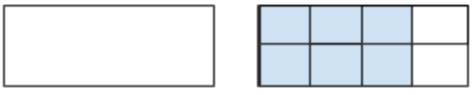
Hint (c):

Refer to part (a) for help.

1-47a

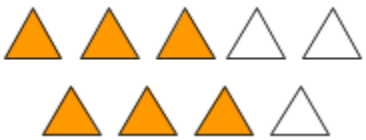
Two thirds

1-47b



One and one eighth

1-47c



Six ninths

Show Lessons

1-48. If five notebooks cost $5.25, how much would three notebooks cost?

Hint:

This is very similar to problem 1-38, where you found the cost of 5 pounds of peaches from the cost of 2 pounds.

More Help:

Try solving for the cost of one notebook first. With this value you will be better able to find the cost of three.

Answer:

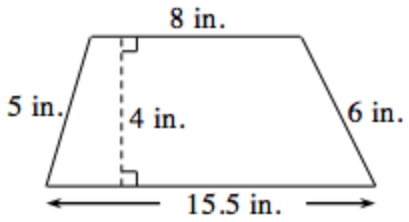
The cost of three notebooks is $3.15.

Find the cost of one notebook by dividing 5.25 by 5 to get $1.05 for each ONE notebook.
Then take the cost for one notebook $1.05 and multiply that by 3 notebooks to get $3.15

Show Lessons

1-49. Find the perimeter and area of each figure below.

a.



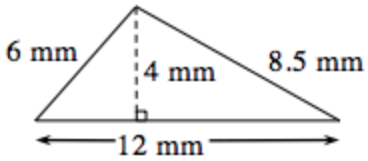
Hint (a):

Refer to the math notes above problem 1-11.
Check your tool kit for area and perimeter.

Answer (a):

Perimeter: 34.5 inches
Area: 47 square inches

b.



Hint (b):

See part (a).

1-49a.
Area of Trapazoid:
Add the top and bottom bases 8 + 15.5 = 23.5
Divide 23.5 by 2 to get 11.75
Multiply 11.75 by the height which is 4 to get 47 inches ^{2}
The little 2 is called a superscript. It means there are 47 squares inside the trapezoid.

Perimeter: Add 8 + 5 + 6 + 15.5 = 34.5 inches

1-49b.
Area of a Triangle:
Multiply 12 by 4 = 48 then divde by 2 to get 24 mm^2

Perimeter: 6 + 8.5 + 12 = 26.5 mm