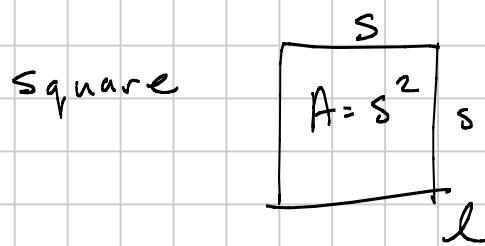


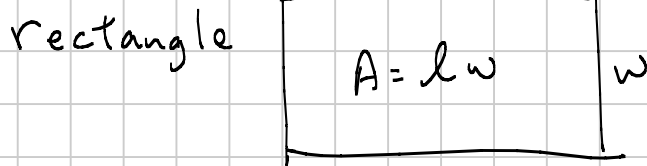
Math 8 Chapter 1 Reference Sheet.

Note Title

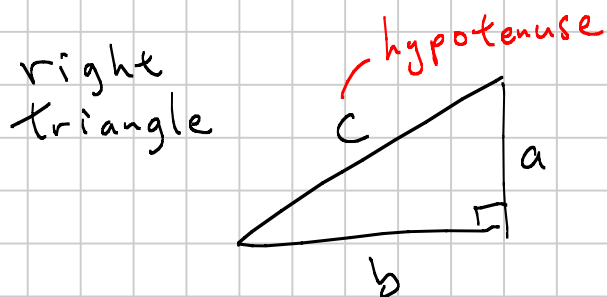
2014-07-17



$$s \equiv \text{side length} = \sqrt{A}$$
$$P \equiv \text{perimeter} = 4s$$



$$l = A/w$$
$$w = A/l$$
$$P = 2(l+w)$$



c is largest
 $a < c, b < c$

$$a^2 + b^2 = c^2$$

$$c = \sqrt{a^2 + b^2}$$
$$a = \sqrt{c^2 - b^2}$$
$$b = \sqrt{c^2 - a^2}$$

hypotenuse is longest side, opposite to right angle.
If a, b, c are whole numbers, then they are a Pythagorean Triplet.

Triangle is acute if $a^2 + b^2 > c^2$
Triangle is obtuse if $a^2 + b^2 < c^2$

If a whole number has an odd number of factors, then it is a perfect square.

If a whole number has an even number of factors, then it is not a perfect square.

A perfect square has a whole number for its square root.
A non perfect square has a radical as its square root.

Estimating Square Roots: when not a perfect square.
Find the closest perfect squares that bound the radicand and do a linear interpolation.

eg) $\sqrt{57} \Rightarrow 57$ is bounded by 49 and 64

$$\rightarrow \sqrt{49} = 7 \Rightarrow 7 + \frac{57-49}{64-49} = 7 \frac{8}{15}$$

Squares and Square Roots. (you can say root if the context can be implied)

Squares - just multiply the number by itself. eg) $5^2 = 25$
Square Root - find the number when multiplied by itself will equal the radicand.

eg) $\sqrt{36} = \sqrt{6^2} = 6$

radical
radicand

Applications.

Remember that a Right Triangle makes half of a rectangle. In addition, the diagonal of a rectangle is always the hypotenuse. A square is just a special case of rectangles.



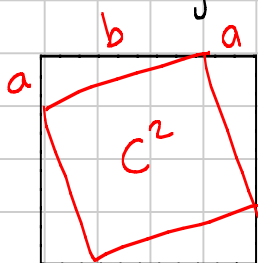
Area is the amount of stuff we need to cover the dimensions. Some examples are:

- grass seeds to cover lawn
- paint to colour a box
- canvas to make a painting
- fabric to make a kite
- frosting to cover a cake
- glass to make a window

Perimeter is the amount of stuff we need to go around the dimensions. Some examples are:

- fence around a property
- frame around a door
- frame around a picture
- frame around a TV
- crust around a pizza
- rails around a pool

Calculating Area of Slanted Square - subtract area of triangles from circumscribed square



$$c^2 = (a+b)^2 - 4 \left(\frac{1}{2} \right) ab$$

circumscribed square 4 triangles