

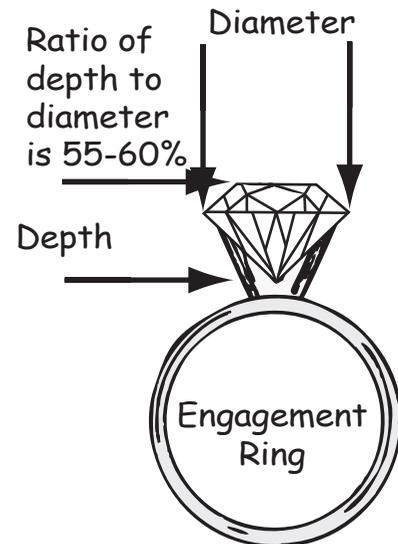
MEASURING CARATS

Andy's older sister got engaged on Valentine's Day. He looked at her new ring and asked her what a carat was. She wasn't exactly sure, but she knew it was a way of measuring how big a diamond was.

Andy spent some time that night researching diamonds. He learned that the stones do not look shiny when they are dug out of the earth. They have to be cut and polished first. Diamonds can be split along the grain, just like you can split a log. To cut across the grain of the stone, you use a very fine blade coated with diamond dust. Finally, the rough cut stone is polished to create many little faces, or facets. The shape and the facets make all the light that goes into a diamond bounce back out. This makes the diamond sparkle.

The jeweler at the mall told Andy that a carat is a measure of weight, not size. It is equal to about one-fifth of a gram in weight. However, most round diamonds are cut to very similar proportions (the percentage of depth to diameter). You can use carats to estimate the size of a diamond.

Diamond Reference Table	
Weight (carats)	Diameter (mm)
.10	3.0
.25	4.2
.33	4.5
.50	5.2
.66	5.7
.75	5.9
1.00	6.5
2.00	8.2



Andy sees that his sister's ring has 4 diamonds, each 3.0 mm in diameter. Locate that size diamond in the reference table and calculate how many carats of diamond weight are in Andy's sister's ring.

If the depth of a diamond is 60% of the diameter, does that mean it is higher than it is wide, or wider than it is high?

Draw a diamond that is 20 mm in diameter, with a ratio of depth to diameter of 60%. What is the depth of your diamond?

Estimate your weight in carats.
(Hint: One kilogram is equal to about 2.2 pounds.
Convert your weight to kilograms, then grams, then carats.)
