

## Diamonds Are Forever



### Background

Every diamond is unique, and there are a variety of factors which affect the price of a diamond.

The weight of a diamond stone is indicated in terms of *carat* units and larger diamond stones command higher prices in view of their rarity.

The *clarity* of a diamond tells of its purity. Being products of nature, diamonds have inclusions only visible under a jeweller's magnifying glass or a microscope. Diamonds with no inclusion under a loupe with a 10 power magnification are labelled IF ("internally flawless"). Lesser diamonds are categorised in descending order as "very very slightly imperfect" VVS1 or VVS2 and "very slightly imperfect" VS1 or VS2.

The most prized diamonds display *colour purity*. They are not contaminated with yellow or brown tones. Top colour purity attracts a grade of D. Subsequent degrees of colour purity are rated E, F, G... all the way down the alphabet ladder.

The *cut* of a raw diamond stone relies on the experience and the craftsmanship of the diamond cutter. A variety of different shapes are achieved – the most common being the round cut diamond shape. The optimal cut should neither be too deep nor too shallow.

### Data

Data on 308 round diamond stones was collected from a Singapore based retailer of diamond jewellery. The weights of the diamond stones ranged from 0.18 to 1.10 carats (a one carat diamond stone weighs 0.2 gram) and were priced between \$US446 and \$US11,205.60. The jewellery store adopted a fixed-price policy.

Source: Singapore's Business Times February 18<sup>th</sup> 2000 edition

## **Variables**

**Carat** = Weight of diamond stones in carat units

**Colour** = Numerical value given for quality of colour ranging from 1=colourless to 6=near colourless.

(This corresponds to the diamond grading system of D, E, F, G, H and I)

**Clarity** = Numerical value given for clarity of diamond ranging from 1=flawless to 5=very small inclusions. (This corresponds to the diamond grading system of IF, VVS1, VVS2, VS1 and VS2)

**Lab** = Certification laboratory that gave the grading (GEM=Gemological Institute of America, INT=International Gemmological Institute, DHC=Diamond High Council)

**Price** = in \$US

## **Questions**

Is there a formula for determining the price of a diamond? Could you create one?

How does colour or clarity affect the projected price? (compare this with carat)

Does the laboratory who graded the diamond have any influence on price?