

Literate Calculation

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Monday, February 02, 2015

Summary

For pizza lovers, Goat Hill's special combination pizza is very delicious. To get the most for every slice, we will calculate the cost per square inch for each size of pizza.

Introduction

Here is detailed information about special combination pizza:

Size	Inches	Price
Small	10"	\$17.95
Medium	12"	\$21.95
Large	14"	\$24.95
Extra Large	16"	\$28.95

Body

An equation for the area of a pizza is:

$$A = \pi r^2$$

The diameter of each size pizza is:

```
d_small    <- 10
d_medium   <- 12
d_large    <- 14
d_exlarge  <- 16
```

The price of each size pizza is:

```
p_small    <- 17.95
p_medium   <- 21.95
p_large    <- 24.95
p_exlarge  <- 28.95
```

For the small pizza, d=10 inches:

```
Area <- function(diameter){
  pi * (diameter/2)^2
}
```

This gives us an area of 78.54 square inches.

```
A_small <- Area(d_small)
```

Therefore, the cost per square inch for small size of pizza is \$0.23

```
V_small <- p_small/A_small
```

And the medium pizza is: \$0.19 The large pizza is: \$0.16 The extra large pizza is: \$0.14

As we can see from the graph that, the bigger size the pizza, the cheaper the price is.

```
pizza_diameter <- c(small=10, medium=12, large=14, exlarge=16)
pizza_price <- c(small=17.95, medium=21.95, large=24.95, exlarge=28.95)
pizza_area <- Area(pizza_diameter)
price_per_sq_inch <- pizza_price/pizza_area
plot(pizza_diameter, price_per_sq_inch, type="b")
```



Conclusion

Through calculation, we can tell that the extra large pizza is the best deal among the four sizes of pizza.