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Project II: Geometry and Interior Design

Math 105

By Richie Heinlein

List of Materials and Prices for New Look:

1. Carpet:

Store Name----Lowe's

Brand----Mohawk

Price----\$3.15 per sq. ft

Color----Gray

Pattern----None

Attributes----Scotch Guarded

2. Primer for Walls and Ceiling:

Store Name----Lowe's

Brand----Valspar

Name of Product: First Step

Price----\$39.98 per 5 gallon bucket

Color----White

3. Paint for Walls and Ceiling:

Store Name----Lowe's

Brand----Enterprise

Price: \$13.97 per gallon

Colors: Purple, Blue, Green, Yellow, Orange, and Red

Attributes: Semi-Gloss

4. Heating and Ventilation Registers:

Store Name: Lowe's

Brand: Metal Smith Inc.

Price: \$4.97 per register

Color: Gray

Attributes: Shiny, 12 in. long and 2 in. width

5. Door:

Store Name: Lowe's

Brand: Coba

Price: \$1752

Color: Red

Attributes: Genuine Mahogany, 36 in. length and 80 in. height

6. Windows:

Store Name: Lowe's

Brand: Pella

Price: \$143 per window

Color: Clear

Attributes: 36 in. width and 62 in. length

7. Lights

Store Name: Lowe's

Brand: Simkar

Price: \$150 per light

Colors: Brown and White

Attributes: Fluorescent, 53.25 in. length and 22 and 3/16 in. width per light

Calculations:

1. Carpet:

Room= 40 ft. length and 30 ft. width

Room= 1200 sq. ft

Carpet=\$3.15 per sq. ft.

Carpet will cost \$3780

2. Primer:

Long Walls= 40 ft. length and 20 ft. height

Short Walls= 30 ft. length and 20 ft. height

Area of Long Walls= 800 sq. feet

Area of Short Walls= 600 sq. feet

Primer=\$39.98 per 5 gallon bucket and each bucket will cover 300 sq. ft.

Two coats of primer are applied.

Long Walls= 800 sq. ft. + 800 sq. ft.= 1600 sq. feet

Short Walls= 600 sq. ft. + 600 sq. ft.= 1200 sq. ft.

Ceiling= 40 ft. length and 30 ft. width

Area of Ceiling= 1200 sq. ft.

$1600 + 1200 + 1200 = 4000$ sq. ft. to apply primer (x2)= 8000

$8000/300 = 26.66666667$ gallons of primer

This number divided by 5 gives the number of buckets.

We need 5.333333333 buckets of primer

This number multiplied by 39.98 gives the price of primer used.

Price of Primer used= \$213.23

4. Door:

36 in. x 80 in.

This in ft.= 3 ft. x 6.666666667 ft.= 20 sq. ft.

Price of Genuine Mahogany Door: \$1752

5. Vents

1 ft x 2 in.

There will be 6 vents joined together vertically

Total Area of Vents= 1 sq. ft.

Price of vents= \$4.97 x 6= \$29.82

6. Windows

36 in. x 62 in.

There are 4 windows. Two of them are joined horizontally, the other two are right underneath adjacent. This makes a cube.

In ft., each window= 3 ft. x 5 and 1/6 ft.

Since there are two windows next to each other, we double this. 6 ft x 10.33333333 or about 62 sq. ft. (actual amount= 61.99999998)

Total Price of Windows= \$143 x 4= \$572

7. Lights:

53.25 in. x 22 and 3/16 in. per light

In ft., this = 1.8489958333 ft x 4.4375 ft. per light

Two lights are joined at their long sides, making their combined width double. This is per ceiling color sector.

We now have 3.697991666 ft. x 4.4375 ft.

Area of light in one ceiling color sector= about 16.41 sq. ft.

Price of one side of lights= \$150 x 2 or \$300

We double that. Total cost of lights= \$600

8. Paint for Walls and Ceiling:

Formula= (sq. ft. to be painted/300) x 2. Answer to formula is multiplied by \$13.97

Long Wall----Yellow:

We have our door here that measures 20 sq. ft.

Area of Wall to be Painted= 800 – 20 or 780 sq. ft.

$780/300= 2.6$ gallons a coat x 2 coats. This = 5.2 gallons of paint

Price of paint= $5.2 \times \$13.97$

Price= \$72.65

Short Wall----Purple:

Area to be painted= $600 - 1 = 599$ sq. ft.

$599/300= 1.996666667$. This times 2= 3.993333333 . This x \$13.97= the price of paint.

Price of Purple Paint: \$55.79

Long Wall----Blue:

Area to be painted= $800 - 62$

Area to be painted=738 sq. ft.

$738/300= 2.46$ gallons

2.46 gallons x 2= 4.92 gallons

$4.92 \times \$13.97=$ price of blue paint

Price of Blue Paint= \$68.74

Short Wall----Green:

Area to be painted= 600 sq. ft

$600/300=2$ gallons x 2

$4 \times \$13.97=$ price of green paint

Price of Green Paint= \$55.88

Ceiling Color Sector----orange:

Area to be Painted= (1200/2)-16.41

Area to be Painted= 583.59 sq. ft.

$583.59/300 = 1.9453 \times 2$

$3.8906 \times \$13.97 =$ cost of orange paint

Price of Orange Paint= \$54.36

Ceiling Color Sector----Red

The calculation is the same.

Price of Red Paint= \$54.36

Hypothetical Invoice

Genuine Mahogany Door----Coba: \$1752

5 Gallon Bucket of White Primer x 6----Valspar (First Step): \$239.88

36x62 Window x 4----Pella: \$572

53.25x22 and 3/16 Fluorescent Lights x 4----Simkar: \$600

1200 sq. ft. Scotch Guarded Gray Carpet----Mohawk: \$3780

Yellow Semi-Gloss Paint x 6 gallons----Enterprise: \$83.82

Purple Semi-Gloss Paint x 4 Gallons----Enterprise: \$55.88

Blue Semi-Gloss Paint x 5 gallons----Enterprise: \$69.85

Green Semi-Gloss Paint x 4 Gallons----Enterprise: \$55.88

Orange Semi-Gloss Paint x 4 Gallons----Enterprise: \$55.88

Red Semi-Gloss Paint x 4 Gallons----Enterprise: \$55.88

Heat Register 1ft. x 2 in. x 6---Metal Smith Inc.: \$29.82

Total-----\$7350.89

Wasted Materials: How Much Money Was Lost?

Door: \$0

Primer: \$26.65

Lights: \$0

Windows: \$0

Vents: \$0

Carpet: \$0

Yellow Semi-Gloss Paint: \$11.17

Purple Semi-Gloss Paint: \$.09

Blue Semi-Gloss Paint: \$1.11

Green Semi-Gloss Paint: \$0

Orange Semi Gloss Paint: \$1.52

Red Semi-Gloss Paint: \$1.52

Total-----\$42.06 in cost of materials

Room Description

As one can see, this is a very large room. The room is designed to host a goodly amount of people and or children. The multi-colored scheme is to be a playful environment for kids and be a cheerful one to adults. The color scheme is also designed to add humor that is in good taste.

This room is 40 ft. in length, 30 ft. in width, and 20 feet in height. If children want to use high-bounce balls, this is the place to do it. Even though something like this would be expensive to build, the room is worth it for what kind of things can be accomplished with such a room.