

# Field Log - Choose the Building Material - Answer Key

## Step 1:

Dr. Wick has come up with three options to use as the base of his floating golf course. The three options in the table below all have different prices. Find out how much it will cost to cover Dr. Wick's entire golf course in each option. Write the total cost at the bottom of each column. **Remember:** the area of Dr. Wick's course was 121,600 square miles!

Option 1	Option 2	Option 3																								
<div> <b>Klimas Kelp</b></div>	<div> <b>Agent W</b></div>	<div> <b>Wood and Rope</b></div>																								
<table><tr><td>Starting Cost</td><td>\$0</td></tr><tr><td>Cost per Square Mile</td><td>\$100</td></tr><tr><td>Additional Cost</td><td>\$0</td></tr><tr><td>Maintenance</td><td>\$7,000,000</td></tr></table>	Starting Cost	\$0	Cost per Square Mile	\$100	Additional Cost	\$0	Maintenance	\$7,000,000	<table><tr><td>Starting Cost</td><td>\$10,000,000</td></tr><tr><td>Cost per Square Mile</td><td>\$74</td></tr><tr><td>Additional Cost</td><td>\$0</td></tr><tr><td>Maintenance</td><td>\$1.25 per square mile</td></tr></table>	Starting Cost	\$10,000,000	Cost per Square Mile	\$74	Additional Cost	\$0	Maintenance	\$1.25 per square mile	<table><tr><td>Starting Cost</td><td>\$0</td></tr><tr><td>Cost per Square Mile</td><td>\$47.75</td></tr><tr><td>Additional Cost</td><td>\$5,500 per 100 square miles</td></tr><tr><td>Maintenance</td><td>\$550 per 10 square miles</td></tr></table>	Starting Cost	\$0	Cost per Square Mile	\$47.75	Additional Cost	\$5,500 per 100 square miles	Maintenance	\$550 per 10 square miles
Starting Cost	\$0																									
Cost per Square Mile	\$100																									
Additional Cost	\$0																									
Maintenance	\$7,000,000																									
Starting Cost	\$10,000,000																									
Cost per Square Mile	\$74																									
Additional Cost	\$0																									
Maintenance	\$1.25 per square mile																									
Starting Cost	\$0																									
Cost per Square Mile	\$47.75																									
Additional Cost	\$5,500 per 100 square miles																									
Maintenance	\$550 per 10 square miles																									
TOTAL: \$ <div>\$19,160,000</div>	TOTAL: \$ <div>\$19,150,400</div>	TOTAL: \$ <div>\$19,182,400</div>																								

Be sure to show your work for each option here:

**Klimas Kelp**

$$0 + (\$100 \times 121,600) + 0 + \$7,000,000$$

$$(12,160,000) + 7,000,000$$

Total Cost = \$19,160,000

**Agent W**

$$\$10,000,000 + (\$74 \times 121,600) + 0 + (\$1.25 \times 121,600)$$

$$10,000,000 + (8,998,400) + (152,000)$$

Total Cost = \$19,150,400

**Wood and Rope**

Additional Cost

$$\$5500/100 \text{ sq. mi.} = X/1 \text{ sq. mi.}$$

$$X = \$55 \text{ per sq. mi.}$$

Maintenance

$$\$550/10 \text{ sq. mi.} = X/1 \text{ sq. mi.}$$

$$X = \$55 \text{ per sq. mi.}$$

$$0 + (\$47.75 \times 121,600) + (\$55 \times 121,600) + (\$55 \times 121,600)$$

$$(5,806,400) + (6,688,000) + (6,688,000)$$

Total Cost = \$19,182,400

## Step 2:

Order the three options from most expensive to least expensive.

Most Expensive

Wood and Rope

Klimas Kelp

Least Expensive

Agent W

Sum it Up:

Make a list of the math terms or formulas you used to decide which option is most expensive.