

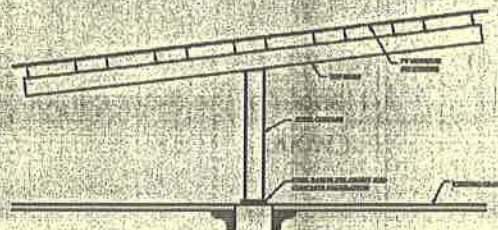
KEY

Date: \_\_\_\_\_

~~42/48~~

**SHOW YOUR WORK!** You may use a calculator, but to get credit, you must record your thinking.

information and the details below to answer the questions.



Carport is 18 feet by the width of a parking area. (Each parking space is 18' x 8'). Maximum tilt is 10 degrees. The carport will cover 19 parking spaces (one block of 10 and one block of 9).

- What are the dimensions of the solar panel?  
6.13' long x 3.650' wide (in decimal form)  
In feet and inches? 6'-1 1/2" long x 3'-8" wide (Round to the nearest 1/2")
- What are the dimensions of the carports? 10 car: 80' long x 18' wide  
9 car: 72' long x 18' wide
- If you were to layout the solar panels lengthwise across the full length of the 10 parking spaces, how many solar panels would fit on the 10-car carport? Show your work.

→ 13  
↓ 4

52 panels

- 4) If you were to rotate the solar panel 90 degrees, and layout the solar panels across the full length of the 10-car carport, how many solar panels would fit on the carport? Show your work.

→ 21  
↓ 2

42 panels



Name: \_\_\_\_\_ Date: \_\_\_\_\_

## SOLAR ESTIMATION TEST

Use PV Watts (and the information provided above) to find the answer the following questions:

Address: 307 Wagner Creek Rd, Talent, OR

11) What is the tilt of the solar panels (assume the maximum slope of the carport)? 10°

12) What is the azimuth? 309°

13) Complete the following table.

	9-car	10-car
DC System size	27.7 kW	30.8
kWh output	31,266	34,705
Annual Value	\$3,246	\$3,608
Percent Solar Coverage	76.13%	80.97%
Adjusted DC System Size	21.088 kW	24.94
Adjusted kWh output	23,802.8	28,148.4
Adjusted annual value	\$2,471.18	\$2,921.40

Project Costs:

14) The carport installation cost is \$1325 per parking space. The cost of the 9-car carport is \$5,798.

The cost of the 10-car carport is \$6,050. What is the total cost of installing the carports?

~~\$30,979.50~~ \$37,023 25175  
11848

15) The cost of installing the solar panels is \$2.25 per watt. What is the cost of installing the solar panels?

\$103,563

16) Assuming the project is eligible for the \$2500 commercial rebate, what is the return on investment for this project?

Cost: 103,738  
ann. val. \$5392.58

19.23 yrs  
or 19 yrs, 3 mo