Warm Up

9/8

1. Check GoogleClassroom, and complete the 2 assignments. (Notebook Check)

2. Simplify:

$4^2 \div 8 - (5)(-4) + (2-5)^2$

$4^2 \div 8 - (5)(-4) + (-3)^2$ → Parenthesis

$16 \div 8 - (5)(-4) + 9$ → Exponents

$2 - (-20) + 9$ → Mult/Div

$2 + 20 + 9$ → Add/Sub.

31

Recap 1.3 A

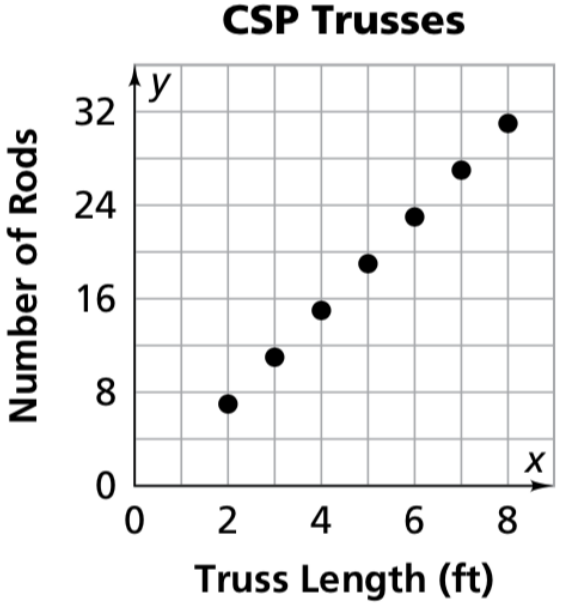
Let's check the changes!

Figure 1

Length of Truss	2	3	4	5	6	7	8
Number of Rods	7	11	15	19	23	27	31

+1 +1 +1 +1 +1 +1

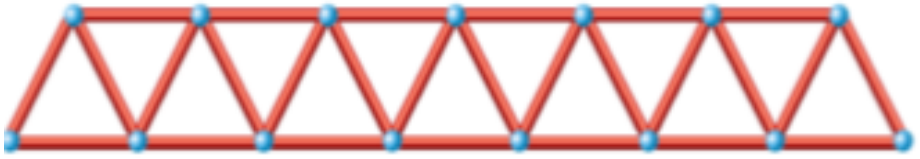
+4 +4 +4 +4 +4 +4 +4



What patterns do we see?

As the length increases by 1 foot, the # of rods increases by 4

We can see this is linear from both the table and the graph.

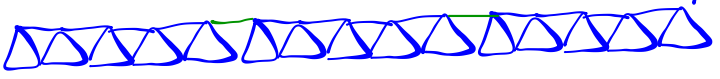


Estimate how many rods for a 50 foot long truss

What were your strategies?

200 199 190 150 203

Length of 5 = 19 rods (19 rods)(10) ← # of 5 ft spans



190 + 9 = 199

# of connectors

Increase for each foot (from table) = 4 rods

4(49) = 196 + 3 = 199

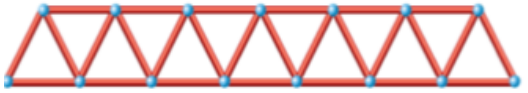
↑ first triangle

(48)(4) = 192

↑ feet

192 + 7 = 199

↑ # of rods for 2 ft (from table)



Estimate how many rods for a 50 foot long truss

199 total

5 feet uses 19 rods

$10 \cdot 19 = 190$ + 9 connecting rods

for 10 5ft sections

199 total

$50ft - 8ft = 42ft$

We need 42 more feet.

He knew at 8 ft we used 31 rods

According to the table there is an increase of 4 rods / foot

$42 \cdot 4 + 31 = 199$

# of rods for 42 ft

# of rods for 8 ft

$3 + 49(4) = 199$

We need 49 more feet

4 rods/foot

Went backwards on the table to find 3 rods needed for 1 foot

$(48)(4) = 192$

feet

$192 + 7 = 199$

# of rods for 2 ft (from table)

5. By counting the triangles she could see for any length, Jenna says she figured out a pattern for the number of rods. For overall length 7, she sees 7 triangles and 6 rods connecting these triangles, so she writes $7 \times 3 + 6 = 27$. For length L, she writes $N = 3L + L - 1$. Explain where she gets the $3L$ and the $L - 1$ in her expression.

N = # of rods

L = # of feet long

$N = 3L + L - 1$

total # of rods

Length of truss

Length = 2

$N = 3(2) + 2 - 1$

calculating rods for # of triangles

# of connectors

Let's Complete Problem 1.3B

3. Describe the pattern of change in the number of rods as the number of steps increases.
4. How is the pattern you described shown in the table? How is it shown in the graph?

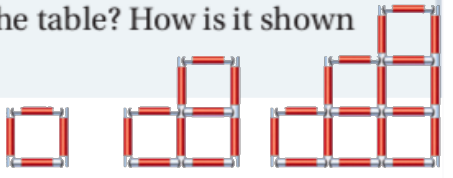


Figure 2

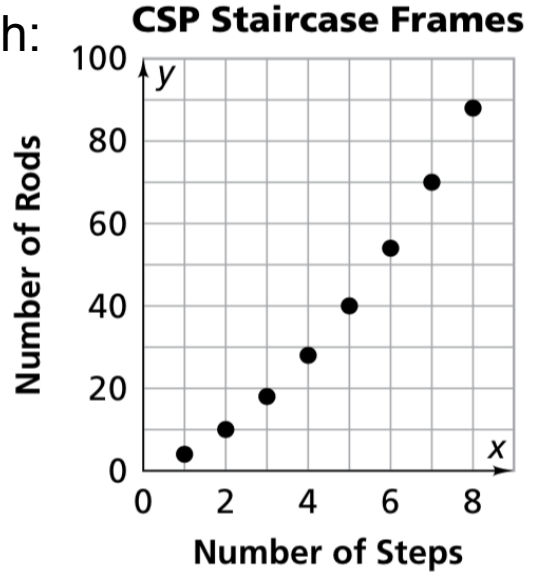
CSP Staircase Frames

Number of Steps	1	2	3	4	5	6	7	8
Number of Rods	4	10	18	28	40	54	70	88

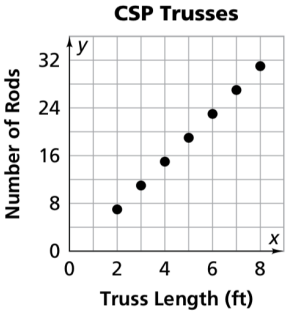
+1 +1 +1 +1 +1 +1 +1

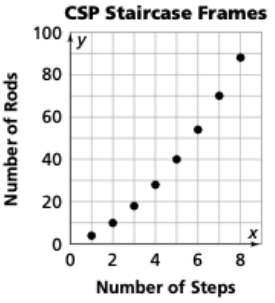
+6 +8 +10 +12 +14 +16 +18

Graph:



C How is the pattern in Question A similar to the pattern in Question B? How is it different? Explain how the similarities and differences are shown in the tables and graphs.





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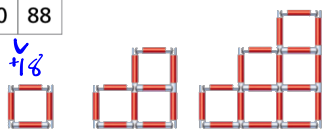

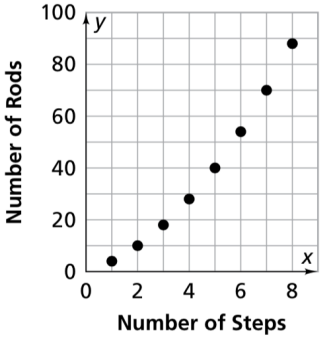

Same:

Different:

Classwork

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4. During the medal ceremonies at a track meet, the top athletes stand on platforms made from stacked wooden boxes. The number of boxes depends on the number of medal winners.

1 medalist
1 box

2 medalists
3 boxes

3 medalists
6 boxes

a. Copy and complete the table below.

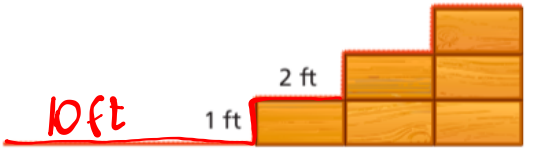
Medal Platforms

Number of Medalists	1	2	3	4	5	6	7	8
Number of Boxes	1	3	6	■	■	■	■	■

b. Make a graph of the (number of medalists, number of boxes) data.

c. Describe the pattern of change shown in the table and graph.

d. Each box is 1 foot high and 2 feet wide. A red carpet starts 10 feet from the base of the platform and covers all the risers and steps.



Copy and complete the table below.

Carpet for Platforms

Number of Steps	1	2	3	4	5	6	7	8
Carpet Length (ft)	■	■	■	■	■	■	■	■

e. Make a graph of the (number of steps, carpet length) data.

f. Describe the pattern of change in the carpet length as the number of steps increases. Compare this pattern to the pattern in the (number of medalists, number of boxes) data.

Homework

Finish classwork