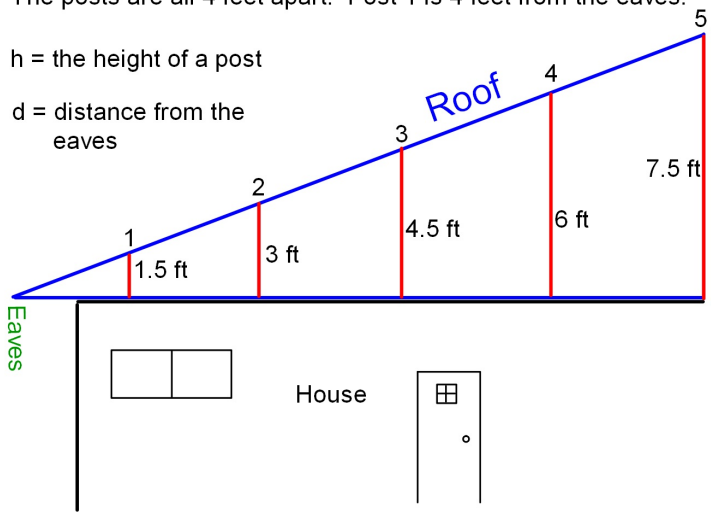
The posts are all 4 feet apart. Post 1 is 4 feet from the eaves.

h = the height of a post

d = distance from the eaves

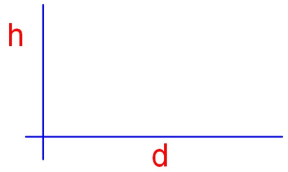


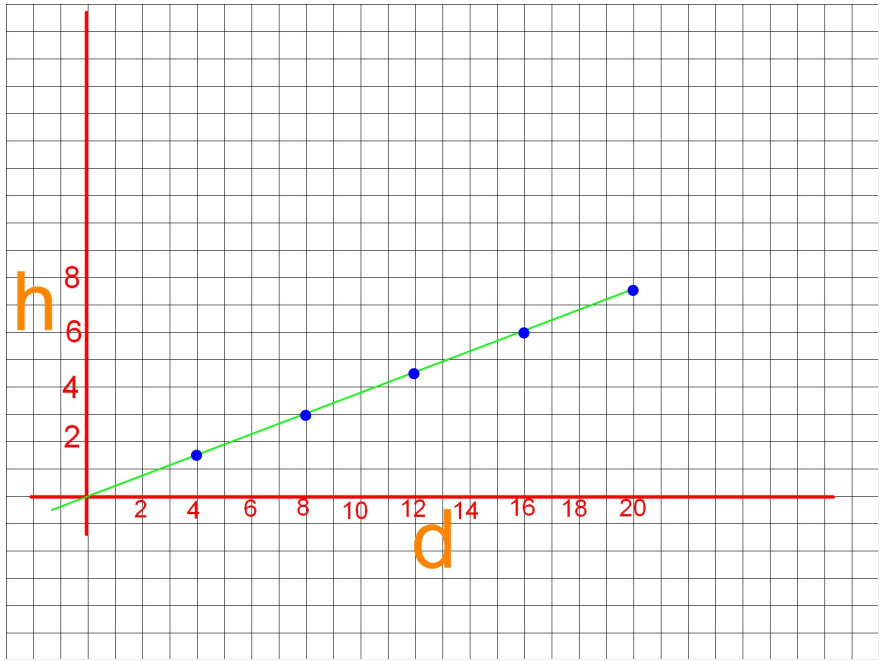
Find the ratio $\frac{h}{d}$ for each post.

POST	h	d	$\frac{h}{d}$
1	1.5	4	$\frac{1.5}{4} = 0.375$
2	3	8	$\frac{3}{8} = 0.375$
3	4.5	12	$\frac{4.5}{12} = 0.375$
4	6	16	$\frac{6}{16} = 0.375$
5	7.5	20	$\frac{7.5}{20} = 0.375$

This shows that $\frac{h}{d}$ is a Constant Ratio

Make a scatter plot of the data in the table.





Section 5-5: Direct Variation

Direct Variation is a special Linear Function.

- It has a constant ratio $\frac{Y}{X} = k$

k = the Variation Constant

- Direct Variation Equation:

$\frac{y}{x} = k$ or $y = kx$

Graph of direct variation

- The graph must be a line that passes through the origin.

Does each table of values represent a Direct Variation relationship?

1.

X	Y	$\frac{Y}{X}$
6	28.5	4.75
11	52.25	4.75
19	89	4.6
26	119.6	4.6
42	201.6	4.8

NO

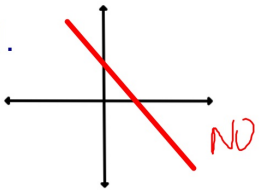
2.

X	Y	$\frac{Y}{X}$
4	5.4	1.35
14	18.9	1.35
22	29.7	1.35
27	36.45	1.35
34	45.9	1.35

Yes

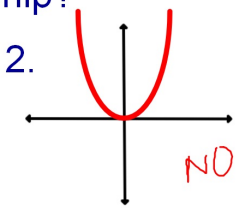
Does each graph represent a Direct Variation relationship?

1.



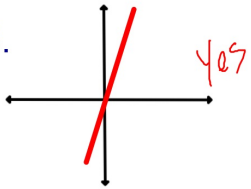
NO

2.



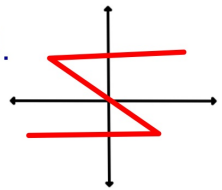
NO

3.



Yes

4.



Direct Variation Equations:

$\frac{y}{x} = k$ or $y = kx$

Hwk #4:

Sec 5-5

Pages 264 to 265

Due Thursday

Problems 3 - 5, 24 - 26

Given the table shows a direct variation relationship, find the value of ?.

To solve Direct Variation situations you can use either equation or you can use a Proportion

X	Y
4	9
10	22.5
24	54
35	?

$\frac{y}{x}$ 2.25

$\frac{9}{4} = \frac{?}{35}$

$y = 2.25x$ or $\frac{y}{x} = 2.25$

$y = 2.25(35)$

$y = 78.75$

1. Use this table to write a Direct Variation equation.

X	Y
2	12.2
9	54.9
15	91.5
18	109.8
23	140.3

$y = 6.1x$ or $\frac{y}{x} = 6.1$

$\frac{54.9}{9} = \frac{50}{x}$

2. Find the value of x when y=50

$\frac{50}{x} = \frac{6.1}{1}$ or $\frac{50}{6.1} = \frac{6.1x}{6.1}$ $x = 8.19$

3. Find the value of y when x=20

$\frac{y}{20} = 6.1$ or $y = 6.1(20)$

$y = 122$