

Graphing Homework # _____

Phases of the Moon are caused by the revolution of the moon around the Earth. As the moon orbits the earth, half of the lunar surface is illuminated by the sun, but the fraction that is visible from Earth changes in a cyclic pattern. It takes 29 ½ days to complete a full lunar cycle. When the moon’s illuminated portion increases the phases are considered to be waxing. The moon waxes from new moon to full moon. When the illuminated portion of the moon decreases the phases is described as waning. The moon wanes from full moon back to new moon.

A new moon occurs when 0 % of the moon is illuminated from Earth. A full moon happens when the entire side of the moon facing the Earth is illuminated (100%). When the moon is 50% illuminated, the phase is called a quarter phase. These 4 phases last for a period of one day. Any phase greater than 0% but less than 50 % is considered a crescent phase. When the moon has an illumination greater than 50% but less than 100% it is called a gibbous phase. Crescent and gibbous moons gradually change shape until the next major phase is reached.

Since the lunar cycle is 29 ½ days and most months are 30 or 31 days, it is rare to see two full moons in a month. When this does happen, the second full moon is called a “blue moon”. As you know, it only happens once in a while.

What causes phases of the moon? _____

How long does a complete cycle take?

What term describes the moon when the percent illumination increases? _____

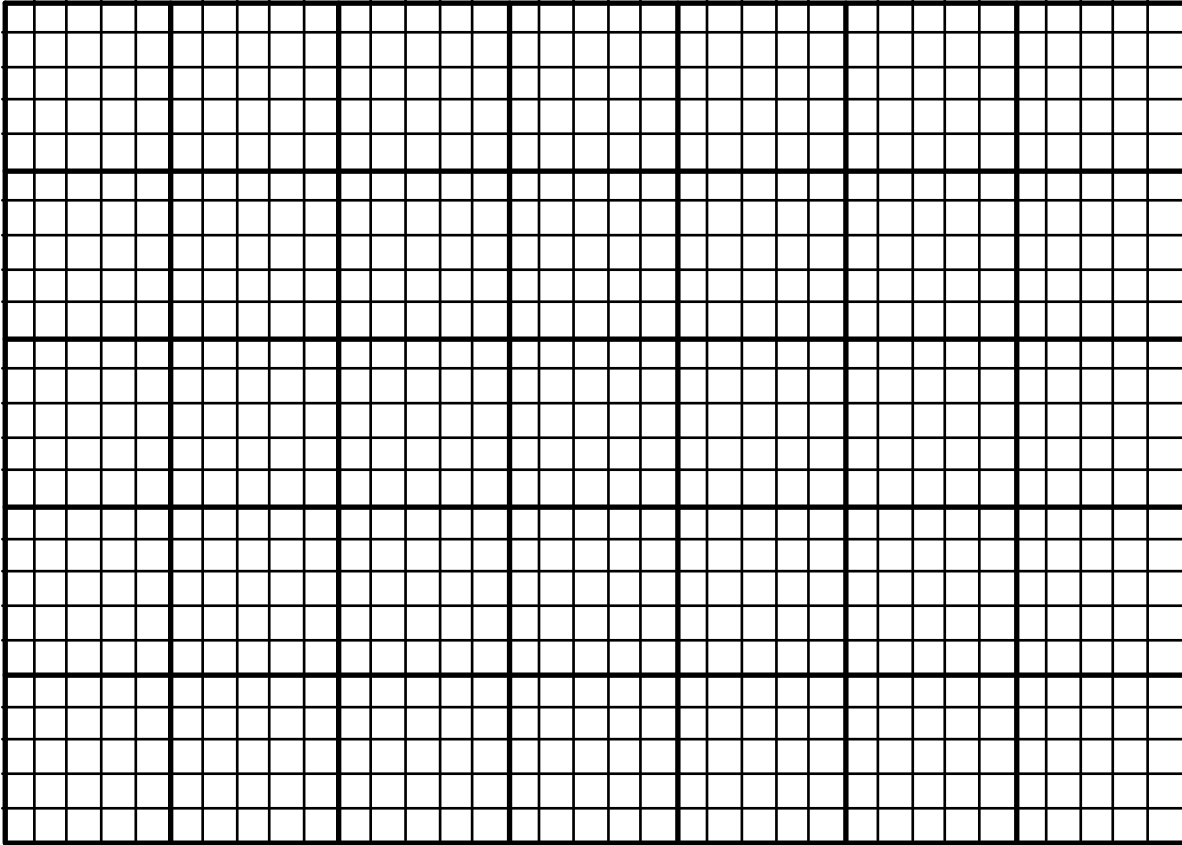
What term describes the moon when the percent illumination decreases? _____

What is the second full moon of a month called? _____

Lunar Day	% Illumination	Lunar Day	% Illumination	Lunar Day	% Illumination
0	0	11	80	22	59
1	1	12	87	23	48
2	4	13	93	24	36
3	10	14	97	25	16
4	17	15	100	26	9
5	25	16	99	27	3
6	34	17	98	28	1
7	44	18	94	29	0
8	54	19	88		
9	63	20	80		
10	72	21	70		

Create a line graph from the data table on the Graph Paper on the back.

- create a uniform scale for Lunar Day on the x - axis (2 points)
- label the x - axis with both a label and a unit. (2 points)
- create a uniform scale % illumination on the y axis. (2 points)
- label the y - axis with both a label and a unit. (2 points)
- plot all thirty points on your graph (2 points)
- connect the points to draw your line (1 point)
- put an appropriate title on top of your graph. (1 point)



**Answer the questions below in Complete Sentences
(2 points each)**

1) On what days would quarter phases be visible?

(2 points)	x- axis	y - axis
Range		
Boxes		
Divide		
Round up		

2) What term is used to describe the phases between day 0 and day 15?

3) What would you call all the phases between day 5 and day 15?

4) Which days would a waning gibbous phase be observed?

5) Describe the 2 sets of days when a crescent moon would be visible.