

Name: _____ Period: _____

Week 12 Homework Packet – 7th Grade Math Honors

ASSIGNMENT DUE TUESDAY, OCTOBER 25, 2016

Unit 2, Chapter 4 – Powers and Roots

SCORE
/4

WEEK SCORE
/12

Stamp

1) The density of a cube can be expressed with the formula ms^{-3} where m is mass and s is the length of a side. If a 200 kg cube has a side length of 2 meters, what is its density in kilograms per cubic meter?

2) The wavelength of an x-ray is approximately one nanometer (one billionth of one meter). Write this number using a negative exponent.

3) In computer science, much of computer capability is measured in exponents of two. A megabyte, for example, can be thought of as 2^{20} bytes. Using a calculator, calculate how many bytes are in one megabyte.

4) A population of bacteria doubles in size every five hours. If there is 6 grams of bacteria now, how much will there be in 20 hours? Show how you set up the problem.

5) Will x^{-3} always, sometimes, or never be a fraction? Explain how you know.

Skills Review

For problems 6–11, write a mathematical expression for each verbal phrase.

6) Five plus twice a number

7) One-third of a number

8) Twice the sum of a number and eleven

9) Four less than five times a number

10) Four more than the cube of a number

11) The square of the sum of two numbers

Name: _____

Period: _____

7th Grade Math Honors

SCORE
/4

Stamp

ASSIGNMENT DUE WED/THU, OCTOBER 26/27, 2016

Unit 2, Chapter 4 - Powers and Roots

Simplify each of the following completely. Use only positive exponents in your answers. Assume variables do not equal zero.

1) $3m^2 \cdot 5m$

2) $2a^3 \cdot 6a^2$

3) $8x^7 \cdot x^{-3}$

4) $\frac{14t^4}{2t^3}$

5) $\frac{6k^2}{12k^5}$

6) $10r^2 \cdot 3r^{-7}$

7) $\frac{24y^9}{3y^9}$

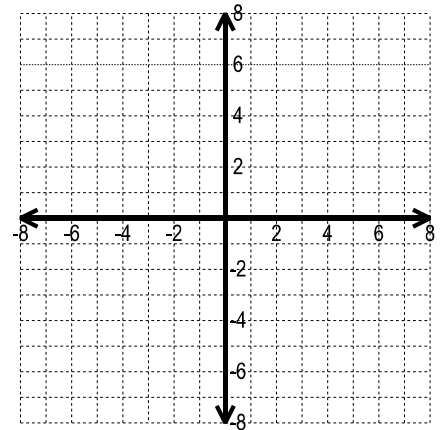
8) The mass of Jupiter is approximately 10^{27} kg. The mass of Pluto is approximately 10^{22} kg. Approximately how many times heavier than Pluto is Jupiter?

9) A rectangle is $3x$ units long and $5x$ units wide. What is the area of the rectangle?

Skills Review

10) In the table below, fill in the boxes under the y column if $y = 2x + 3$. Then use the points to graph the equation on the grid provided. Use the space below the grid to show work.

x	y
-3	
-2	
-1	
0	
1	
2	



Name: _____

Period: _____

7th Grade Math Honors

SCORE

/4

Stamp

ASSIGNMENT DUE FRIDAY, OCTOBER 28, 2016

Unit 2, Chapter 4 - Powers and Roots

Write each of the following numbers in scientific notation.

1) 20,000

2) 400

3) 7,000,000

4) 0.0004

5) 0.000 000 002

6) 64,000

7) 123,000,000,000

8) 29,800

9) 0.0237

10) 0.000 000 094

Write the following numbers in standard notation.

11) 5×10^4

12) 6×10^{-3}

13) 7×10^8

14) 3×10^{-6}

15) 2.8×10^5

16) 1.53×10^3

17) 9.17×10^{-7}

18) 3.8×10^{10}

19) 5.419×10^{-14}

20) 2.8×10^4