

Name: _____ Period: _____

Week 16 Homework Packet – 7th Grade Math Honors

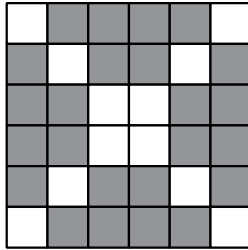
ASSIGNMENT DUE TUESDAY, NOVEMBER 29, 2016

Unit 3, Chapter 5 - Ratio, Proportion, and Similar Figures

For the problems below, all answers must be in simplest form.

1) A classroom has 12 boys and 16 girls in it. What is the ratio of boys to girls in the classroom?

2) What is the ratio of grey squares to white squares in the pattern shown?



3) The drama club has six boys and nine girls. What fraction of the drama club is girls?

4) A prize wheel at a carnival has six winning spots and 30 losing spots. What fraction of the prize wheel's spots are winners?

5) In a room, four people are wearing blue shirts, nine people are wearing green shirts, eight people are wearing red shirts, and fourteen people are wearing yellow shirts. What is the ratio of people wearing blue shirts to people wearing red shirts?

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WEEK SCORE
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Skills Review

Simplify the following exponential expressions.

6) 7^{-2}

7) $x^2 \cdot x^7$

8) $\frac{m^6}{m^8}$

9) $(z^4)^3$

10) A type of bacteria doubles in size every seven hours. If you start with a 5 gram sample of the bacteria and allow it to grow, how much bacteria will there be in 21 hours?

11) Light travels at approximately 3×10^8 meters every second. In one year, there are approximately 3.1×10^7 seconds. Given these, how many meters does light travel in one year?

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ASSIGNMENT DUE WED/THU, NOVEMBER 30/DECEMBER 1, 2016

Unit 3, Chapter 5 - Ratio, Proportion, and Similar Figures

Average speed can be found by dividing distance by time. Use this to solve the problems below. An example has been done for you. **Show how you set up each problem.**

Ex.) If you drive 150 miles in three hours, what is your average driving speed in miles per hour?

$$150 \text{ miles} \div 3 \text{ hours} = 50 \text{ miles per hour}$$

1) A cheetah runs approximately 180 meters in six seconds. How fast is that in meters per second?

2) A factory can make 1000 light switches in five hours. On average, how many light switches can the factory make in one hour?

3) An Olympic sprinter can run 200 meters in approximately 20 seconds. How many meters per second is that?

4) Sound takes approximately five seconds to travel 5000 feet. How many feet per second does sound travel?

5) A glacier's position is measured. Five years later, it has moved 150 meters. How many meters per year does the glacier move?

Skills Review

Evaluate and simplify each of the following. Show all work.

6) $\frac{3}{4} \div \frac{6}{11}$

7) $\frac{3}{8} \div \frac{10}{9}$

8) $\frac{4}{7} \div \frac{5}{14}$

9) $\frac{5}{6} \div \frac{5}{9}$

10) $\frac{10}{9} \div \frac{5}{12}$

11) $\frac{14}{15} \div \frac{21}{10}$

12) $\frac{6}{5} \div \frac{8}{15}$

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ASSIGNMENT DUE FRIDAY, DECEMBER 2, 2016

Unit 3, Chapter 5 - Ratio, Proportion, and Similar Figures

Simplify each complex fraction below. **Show all work!**

1) $\frac{\frac{2}{3}}{8}$

2) $\frac{\frac{5}{1}}{\frac{1}{4}}$

3) $\frac{\frac{6}{3}}{\frac{3}{5}}$

4) $\frac{\frac{3}{8}}{\frac{5}{8}}$

5) $\frac{\frac{5}{6}}{2}$

6) $\frac{\frac{4}{5}}{\frac{3}{10}}$

Skills Review

Some triangular tables are arranged in a row as shown below.



Fig. 1

Fig. 2

Fig. 3

In figure 1, there is one table. Each side of the table can seat two people. So a total of six people can sit at the table arrangement in figure 1. If there are two tables, then they can seat 8 people, as shown in figure 2. If there are three tables, they can seat 10 people, as shown in figure 3. And so on.

7) How many people can sit if there are four tables arranged in a line?

8) How many people can sit if there are ten tables arranged in a line?

9) How many people can sit if there are n tables arranged in a line?