

### M7A Chapter 5 Practice Test

For Exercises 1 and 2, refer to the table below.  
 The table shows the heart rates and masses of different animals.

Animal	Heart Rate (beats/min)	Mass (g)
cat	150	2000
cow	66	800,000
hamster	450	60
horse	44	1,200,000

- Express the ratio of a cow’s heart rate to a hamster’s heart rate as a fraction in simplest form. 1. \_\_\_\_\_
- Express the ratio of the mass of a cat to the mass of a cow as a fraction in simplest form. 2. \_\_\_\_\_
- A 4-gallon jug of milk costs \$5.60. At what price should a  $\frac{1}{2}$ -gallon jug be sold in order for the unit rate for both containers to be the same? 3. \_\_\_\_\_
- A boat dock measures 14 meters in length. Use a conversion factor to write this length to the nearest tenth of a foot. (1 foot = 0.3 meters) 4. \_\_\_\_\_
- Auggie began working on a computer program. After  $7\frac{1}{5}$  hours, he had completed  $20\frac{1}{10}$  lines of code. What was his unit rate of programming in lines of code per hour? 5. \_\_\_\_\_
- Joel works as an auditor and earns \$36,920 per year. What is Joel’s weekly earnings? 6. \_\_\_\_\_
- Is the following statement true or false? Explain your reasoning. 7. \_\_\_\_\_  

$$\frac{\frac{3}{4}}{\frac{2}{16}} = \frac{36}{6}$$
- Write and solve a proportion to solve for  $x$ . 8. \_\_\_\_\_  
 3 ounces of perfume for \$105  
 7 ounces of perfume for  $x$
- Ryan is building a model of the Texas Capitol Building. He is using a scale of 2 inches = 5 meters. What is the height of the model if the Texas Capitol Building is 95 meters high? 9. \_\_\_\_\_

For Exercises 10 and 11, determine whether the set of numbers in each table is proportional. If the relationship is proportional, determine the constant of proportionality.

10.

<b>Birds</b>	1	2	3	4
<b>Beaks</b>	1	2	3	4

10. \_\_\_\_\_

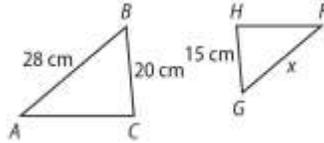
11.

<b>Number of Pizzas</b>	2	4	6	8
<b>Number of Slices</b>	16	32	60	64

11. \_\_\_\_\_

For Exercises 12 and 13,  $\triangle ABC \sim \triangle FGH$ .

12. Find the value of  $x$ .



12. \_\_\_\_\_

13. If  $m\angle A = 50^\circ$  and  $m\angle B = 45^\circ$ , what is  $m\angle H$ ?

13. \_\_\_\_\_

14. At the same time a 5-foot person casts a 2.5-foot shadow, a nearby tree casts an 8-foot shadow. How tall is the tree?

14. \_\_\_\_\_

15. On a set of blueprints for a house, the scale is  $\frac{1}{2}$  inch = 4 feet.

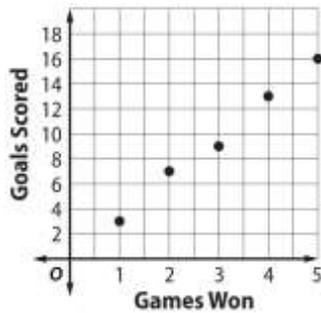
a. Find the actual length of a room that measures 3.2 inches on the blueprint.

b. Suppose an architect is updating the blueprints and decides to use a different scale. An actual length of 30 feet is drawn on the new blueprint as 4 inches. Complete the ratio for the new scale.

$$\frac{1}{2} \text{ inch} = \square \text{ feet}$$

15. \_\_\_\_\_

16. Explain a method for determining if the relationship shown in the graph is proportional.



16. \_\_\_\_\_