NAME _____ DATE _____ PERIOD _____

Lesson 4 Homework Practice

Proportional and Nonproportional Relationships

1. **ANIMALS** The world's fastest fish, a sailfish, swims at a rate of 69 miles per hour. Is the distance a sailfish swims proportional to the number of hours it swims? **Yes; Sample answer:**

Time (h)	1	2	3	4
Distance (mi)	69	138	207	276

The distance to time ratio for 1, 2, 3, and 4 hours is $\frac{69}{1}$ or 69, $\frac{138}{2}$ or 69, $\frac{207}{3}$ or 69, and $\frac{276}{4}$ or 69. Since these ratios are all equal to 69 mi per h, the distance the sailfish travels is proportional to the time it travels.

FOSSILS Use the following information for Exercises 2 and 3.

In July, a paleontologist found 368 fossils at a dig. In August, she found about 14 fossils per day.

2. Is the number of fossils the paleontologist found in August proportional to the number of days she spent looking for fossils that month? **Yes; Sample answer:**

Number of Days Looked	1	2	3	4
Number of Fossils Found	14	28	42	56

The number found to number of days ratios for 1, 2, 3, and 4 days are $\frac{14}{1}$ or 14, $\frac{28}{2}$ or 14, $\frac{42}{3}$ or 14, and $\frac{56}{4}$ or 14. Since these ratios are all equal to 14 fossils per day, the number of fossils found is proportional to the number of days spent looking.

3. Is the total number of fossils found during July and August proportional to the number of days the paleontologist spent looking for fossils in August? **No; Sample answer:**

Number of Days Looked in August	1	2	3	4
Total Number of Fossils Found Up to Date	382	396	410	424

The number of fossils found to number of days spent looking in August ratios for 1, 2, 3, and 4 days are $\frac{382}{1}$ or 382, $\frac{396}{2}$ or 198, $\frac{410}{3}$ or about 136.67, and $\frac{424}{4}$ or 106. Since these ratios are not all equal, the total number of fossils found is not proportional to the number of days spent looking in August.