

Math 7 - Chapter 5 & 6 Review 2 Worksheet

Define the following terms using complete sentences in problems 1-7.

- Ratio : *a comparison of two quantities using division*
- Rate : *a comparison of two quantities with different units*
- Unit Rate : *a rate that has been reduced to a denominator of one*
- Proportional Relationship : *when two or more ratios or rates are equal*
- Non-Proportional Relationship : *when two or more ratios or rates are not equal*
- Proportion : *two equivalent rates or ratios*
- Percent Proportion : *an equation that compares the part to the whole*
- Sarah rides her bike 6 kilometers south to her friend's house. Then she rides 4 kilometers west to see her uncle and finally reaches home 3 kilometers east of her uncle's house. What is the ratio between the distance traveled west and the distance traveled south by Sarah? $\frac{2}{3}$

Find each unit rate for problems 9-10. Round to the nearest hundredth if necessary.

- 29 gallons for 3 minutes *9.67 gallons per minute*
- \$9.25 for 18 pounds *\$0.51 per pound*
- A grocery store sells 5 cans of soup for \$3.50 and 12 cans of soup for \$8.40. Is the cost of the soup proportional to the number sold? Explain why or why not. *Yes, the cost is proportional because each rate is \$0.70 per can.*
- Lauren recorded the sprint times of her sister. At what rate would Lauren's sister have to run 60 meter-sprint in order to keep the relationship between the distance and time proportional?

Time (seconds)	2	2.4	2.8	3.2
Distance (meters)	25	30	35	40

13. Solve: $\frac{6}{v} = \frac{3}{11}$ $v = 22$

14. Solve: $\frac{5}{14} = \frac{l}{7}$ $l = 2.5$

15. Six out of every ten families eat at a restaurant twice a week. If 46,900 families in a certain city eat at a restaurant twice a week, how many families do not eat ^{at} a restaurant twice a week? $31,266.6$

about 31,267 families

Find each missing value for problems 16-19.

- 18% of 50 is what number? 9
- 32 is 0.4% of what number? 8000
- 16 is what percent of 50? 32%
- 45% of what number is 54? 120
- Jack has completed 62.5% of the 40 questions on the test. How many questions has Jack completed? *25 questions*
- Find the percent of change from 27 miles to 53 miles. Round to the nearest whole percent. $97\% \uparrow$
- Last year, Sandro bought a book for \$13.89. This year the same book cost \$15.79. What was the percent of change? $13.68\% \uparrow$
- The regular price of a new bicycle is \$275 and the sale price is \$230. Find the percent of decrease to the nearest whole percent. $16\% \downarrow$

Find the total cost or sale price to the nearest cent for problems 24-26.

- \$11.35 meal; 18% tip $\$13.39$
- \$34 helmet; 25% discount $\$26.25$
- \$2,500 jet ski; 30% discount; 6.5% tax $\$1,863.75$
- Find the total cost of a oil change of \$32 including 7% tax and 20% tip. $\$40.64$

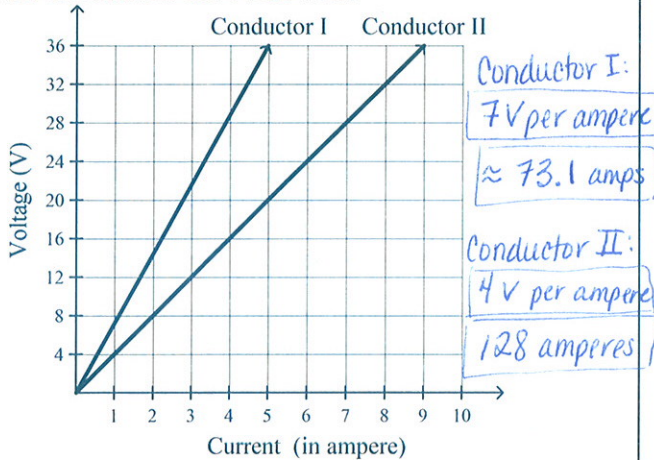
Find the simple interest paid to the nearest cent for problems 28-29.

- \$1,230, 6%, 3 months $\$18.45$
- \$85, 4.5%, 3 years $\$11.48$

30. Mrs. Doubtfire deposited \$1750 in a savings account. Her account earns an interest rate of 1.5%. If she does not deposit or withdraw any money from the account, how much will Mrs. Doubtfire have in the account at the end of the eight months?

\$1,767.50

31. Ohm's law states that the potential difference (voltage across a conductor) is directly proportional to the current. The graph shows the potential difference across two conductors when currents of different strengths are passed through them. Express each conductor's resistance as a unit rate. How much current should be supplied so that both the conductors have 512 volt?



Problems 32-36: Determine whether a proportional relationship exists between the two quantities shown in the graph or table below. Explain your reasoning.

32.

Time (h)	Temperature (°F)
<i>x</i>	<i>y</i>
0	52
1	54
2	56
3	58

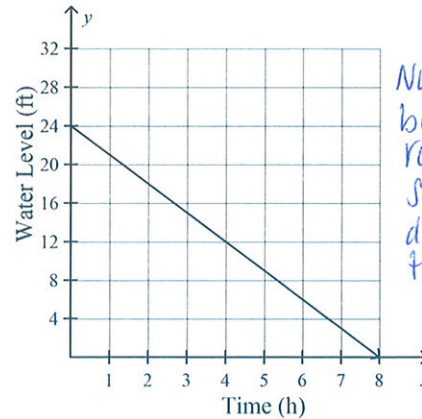
Nonproportional because the unit rates are not the same. (It does not pass through (0,0).)

33.

Time (h)	Distance (mi)
<i>x</i>	<i>y</i>
1	200
2	150
3	100
4	50

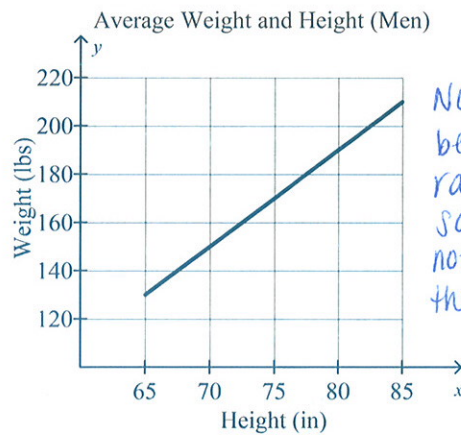
Nonproportional because the unit rates are not the same.

34.



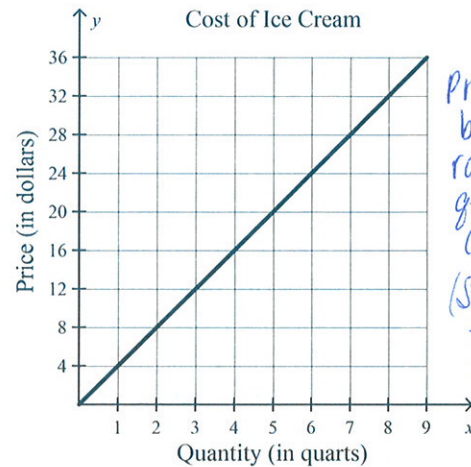
Nonproportional because the unit rates are not the same. (Graph does not pass through the origin.)

35.



Nonproportional because the unit rates are not the same. (Graph does not pass through the origin.)

36.



Proportional because each rate is \$4 per quart of ice cream. (Straight line that passes through the origin.)