

Math Sheet

Name _____ Score _____ / 12 Teacher _____ Date _____

Ratio and rate word problems

Solve each problem exactly, then round requested quantities to the nearest whole unit. A tilde marks a rounded approximation; use exact fractions for comparisons.

1. A printer makes 105 pages in 15 minutes. How many pages does it make in 4 hours, and how many per hour?

2. A pump moves 102 liters in 3 hours. How many liters does it move in one day, and how many per hour?

3. A car travels 134 miles using 5 gallons. How far can it travel using 15 gallons, and how many miles per gallon?

4. A workshop finishes 112 parts in 7 hours. How many parts can it finish in 25 hours, and how many per hour?

5. A cyclist travels 105 kilometers in 3 hours. How far in 11 hours, and what is the speed in kilometers per hour?

6. Store A sells 5 pencils for \$6; Store B sells 6 for \$11. Which has the lower exact price per pencil?

7. Pack A has 8 items for \$9; Pack B has 8 for \$7. Which is the better buy by exact unit price?

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Answer key

Solve each problem exactly, then round requested quantities to the nearest whole unit. A tilde marks a rounded approximation; use exact fractions for comparisons.

1. A printer makes 105 pages in 15 minutes. How many pages does it make in 4 hours, and how many per hour?
 $105/15 \times (4 \times 60) = 1680$ pages; $105/15 \times 60 = 420$ pages / hour

2. A pump moves 102 liters in 3 hours. How many liters does it move in one day, and how many per hour?
 $102/3 \times 24 = 816$ liters / day; $102/3 = 34$ liters / hour

3. A car travels 134 miles using 5 gallons. How far can it travel using 15 gallons, and how many miles per gallon?
 $134/5 \times 15 = 402$ miles; $134/5 = 134/5$ miles / gallon ~ 27 miles / gallon

4. A workshop finishes 112 parts in 7 hours. How many parts can it finish in 25 hours, and how many per hour?
 $112/7 \times 25 = 400$ parts; $112/7 = 16$ parts / hour

5. A cyclist travels 105 kilometers in 3 hours. How far in 11 hours, and what is the speed in kilometers per hour?
 $105/3 \times 11 = 385$ kilometers; $105/3 = 35$ kilometers / hour

6. Store A sells 5 pencils for \$6; Store B sells 6 for \$11. Which has the lower exact price per pencil?
A: $6/5 = 1.20$ dollars / item; B: $11/6 \sim 1.83$ dollars / item; $6/5 < 11/6$; A — first

7. Pack A has 8 items for \$9; Pack B has 8 for \$7. Which is the better buy by exact unit price?
A: $9/8 \sim 1.13$ dollars / item; B: $7/8 \sim 0.88$ dollars / item; $9/8 > 7/8$; B — second