**Ch. 1 Study Guide: Ratios and Rates**

**Write the letter for the correct answer in the blank at the right of each question.**

 **1.** One bus leaves a stop every 9 minutes. A second bus leaves the stop every 15 minutes. If they both leave at 1:25 P.M., at what time will they next leave together?

 **A.** 1:40 P.M. **B.** 1:49 P.M. **C.** 2:10 P.M. **D.** 2:25 P.M.

 **2.** In an art class, there are 32 pens to 40 brushes. What is the ratio of pens to brushes written as a fraction in simplest form?

 **F.** $\frac{4}{5}$ **G.** $\frac{2}{5}$ **H.** $\frac{8}{10}$ **I.** $\frac{5}{4}$

 **3.** The table shows the number of votes each student received for class president. What is the ratio of votes for Hatim to the total number of votes?

|  |
| --- |
| **Students Class Presidential Votes** |
| **Candidate** | **Number of Votes** |
| Brown | 15 |
| Shui | 29 |
| Hatim | 16 |

 **A.** $\frac{15}{4}$ **B.** $\frac{4}{11}$ **C.** $\frac{4}{15}$ **D.** $\frac{1}{4}$

**For Exercises 4 and 5, what is each rate written as a unit rate?**

 **4.** 180 miles on 6 gallons

 **F.** $\frac{1 mi}{3 gal}$ **G.** $\frac{1 mi}{9 gal}$ **H.** $\frac{30 mi}{1 gal}$ **I.** $\frac{90 mi}{1 gal}$

 **5.** $120 for 15 books

 **A.** $\frac{\$8}{1 book}$ **B.** $\frac{1 book}{\$8}$ **C.** $\frac{\$15}{1 book}$ **D.** $\frac{1 book}{\$15}$

 **6.** It took Cedric 42 minutes to jog 12 laps. At this rate, how many minutes did it take to jog each lap?

 **F.** 2.28 min **G.** 3.5 min **H.** 4 min **I.** 4.5 min

 **7.** Julia can type 150 words in 5 minutes. At this rate, how many words can she type in 1 minute?

 **A.** 30 words **B.** 40 words **C.** 50 words **D.** 60 words

 **1.** \_\_\_\_\_\_\_\_\_\_\_\_\_

 **2.** \_\_\_\_\_\_\_\_\_\_\_\_\_

 **3.** \_\_\_\_\_\_\_\_\_\_\_\_\_

 **4.** \_\_\_\_\_\_\_\_\_\_\_\_\_

 **5.** \_\_\_\_\_\_\_\_\_\_\_\_\_

 **6.** \_\_\_\_\_\_\_\_\_\_\_\_\_

 **7.** \_\_\_\_\_\_\_\_\_\_\_\_\_

**For Exercises 8 and 9, use the ratio table given to solve each problem.**

 **8.** A hair salon bought 12 headbands for $24. At this rate, how much will 48 headbands cost?

|  |  |  |
| --- | --- | --- |
| **Headbands** | 12 | 48 |
| **Cost ($)** | 24 |  |

 **F.** $24 **G.** $48 **H.** $60 **I.** $96

 **9.** There are 8 boxes, which contain a total of 56 sweaters, in a store warehouse.
If the store needs 35 sweaters, how many boxes should they take?

|  |  |  |  |
| --- | --- | --- | --- |
| **Sweaters** | 56 |  | 35 |
| **Boxes** | 8 |  |  |

 **F.** 4 boxes **G.** 5 boxes **H.** 7 boxes **I.** 9 boxes

 **10.** For a class trip, 114 students are put on 4 buses. At this rate, how many students would be on 8 buses?

 **11.** While hiking, Mr. Finds burns 808 Calories in 8 hours. At this rate, how many Calories does he burn in 60 minutes?

 **12.** Margo won 24 out of her last 36 tennis matches. At this rate, predict how many matches she would win out of her next 27 matches?

 **13.** A store manager orders T-shirts so that 15 out of every 35 are a medium. How many medium T-shirts would you expect to find when there are 126 T-shirts
on a rack?

 **14.** Mia saves $28 in 8 weeks. Her sister saves $18 in 24 days. Are the rates at which each sister saves equivalent? Explain your reasoning.

 **15.** Luke can read 4 pages in 1 minute. Write the ordered pairs (number of minutes, number of pages read) for Luke reading 0, 1, 2, and 3 minutes.

**8.** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**9.** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

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

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

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

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

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