

# Math Whiz Unit 1 Mastery

## Number System Fluency

### Dividing Fractions

- The county recreation department cleared a  $\frac{3}{4}$  mile long walking trail in Washington Park. There will be a small sign every  $\frac{1}{12}$  mile along the trail. How many signs are needed?  
A) 4                      B) 9                      C) 10                      D) 12
- Ryan bought  $2\frac{1}{4}$  pounds of almonds and divided them into bags with  $\frac{1}{8}$  pound in each bag. How many bags was Ryan able to fill?  
A) 16                      B) 18                      C)  $\frac{9}{32}$                       D)  $2\frac{1}{32}$
- What is the value of the expression  $\frac{3}{8} \div 1\frac{1}{2}$ ?  
A) 4                      B) 5                      C)  $\frac{1}{4}$                       D)  $2\frac{9}{16}$
- Keisha cuts a  $\frac{2}{3}$  foot rope into  $\frac{1}{12}$  foot pieces. How many pieces of rope was she able to cut? Hint: **KCF**  
A) 4                      B) 6                      C) 8                      D) 12

### Long Division

- A local bank donated 4,074 pencils to distribute to the 42 sixth grade classes in the district. How many pencils did each class receive?  
A) 90                      B.) 97                      C) 102                      D) 907
- Charlotte read a 608 page book in 16 hours last month. How many pages per hour was that?  
A) 3.8                      B) 38                      C) 48                      D) 9,728

### Decimal Operations

- What is 16.44 divided by 2.4?  
A. 6.85                      B. 68.5                      C. 685                      D. 6,850

- A cheetah can run 112.65 kilometers per hour. A pronghorn antelope can run 98.1 kilometers per hour. **How much faster** is the cheetah than the antelope?  
A. 10.284                      B. 14.55                      C. 102.84                      D. 210.75
- On a field trip, a 6<sup>th</sup> grade class traveled 19.955 kilometers by train, 7 kilometers by bus, and 2.3 kilometers by car. How far did they travel **all together**?  
A. 19,985 km                      B. 22.955 km                      C. 29.255 km                      D. 1.12985 km
- The Dixon family drove their car an average of 1200 miles per month. If they owned the car for 3.5 months, how many miles did they drive?  
A. 420 miles                      B. 3,650 miles                      C. 4,200 miles                      D. 4,250 miles

### GCF & LCM

- Mr. Fraser asked four students in his class to find the greatest common factor of 24 and 36. Which answer is correct?  
A. 2                      B. 3                      C. 6                      D. 12
- For exercise, Cindy swims every 6 days and jogs every 8 days. She did both today. How many days from now until she swims and jogs again?  
A. 2 days                      B. 14 days                      C. 24 days                      D. 48 days
- What is the GCF of 60 and 90?  
A. 10                      B. 30                      C. 60                      D. 180
- What is the LCM of 10 and 12?  
A. 2                      B. 6                      C. 60                      D. 120

**Unit 1 Mastery Score:**

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# Math Whiz Unit 2 Mastery

## Ratios and Proportional Reasoning

### Ratios, Rates, & Unit Rates

- 1) A youth ice hockey game has three 20-minute periods. Colin plays 12 minutes each period. Which ratio represents **Colin's playing time compared to the total number of minutes of playing time possible**?
- A) 1 to 4      B) 3 to 20      C) 1 to 5      D) 3 to 5
- 2) The local grocery store is having a sale on watermelons. Mr. Jackson purchases 10 watermelons for a school picnic. He pays \$39.90 for the watermelons. What is the **price of each** watermelon?
- A) \$0.39      B) \$3.90      C) \$3.99      D) \$4.50
- 3) In science class, students are learning about organic compounds. An acetic acid molecule is made of 2 carbon atoms, 2 oxygen atoms, and 4 hydrogen atoms. What is the ratio of carbon atoms to oxygen and hydrogen atoms?
- A) 1:3      B) 1:4      C) 2:3      D) 1:2
- 4) Hannah found that an antivirus program on her personal computer scans 182 megabytes of data in 7 seconds. At what rate does her antivirus program scan the data?
- A) 25 megabytes per sec      B) 26 megabytes per sec  
C) 28 megabytes per sec      D) 30 megabytes per sec
- 5) A train travels 210 miles in 3 hours, moving at a constant speed. At this rate, how long will it take for the train to travel 350 miles?
- A) 5 hours      B) 7 hours      C) 8 ½ hours      D) 70 hours
- 6) Mrs. Silva orders 5 pizzas for every 20 students working on the campus clean-up. How many pizzas should she order if 36 students participate?
- A) 8      B) 9      C) 10      D) 12

### Measurement

- 7) The male elephant at the city zoo weighs 8,000 pounds, which is the same as 4 tons. The female elephant weighs 7,000 pounds. How many tons does she weigh?
- A) 3 ¼      B) 3 ½      C) 3 ¾      D) 3  $\frac{7}{10}$
- 8) Victor needs 30 feet of rope. The rope he wants to buy is sold by the yard. If there are 3 feet in 1 yard, how many yards should he buy?
- A) 10      B) 13      C) 33      D) 90
- 9) An architect builds a model of a building in the shape of a rectangular prism. The model is 50.8 centimeters long. What is the length of the model in inches (2.54 cm = 1 in.)?
- A) 10 inches      B) 15 inches      C) 20 inches      D) 25 inches
- 10) Convert:
- 16 g = \_\_\_\_ kg      3.5 m = \_\_\_\_ cm      6mL = \_\_\_\_ L

### Percents

- 11) At Madison middle school, 60% of the 800 students participate in music. How many students participate in music?
- A) 133      B) 400      C) 480      D) 720
- 12) At Sydney's school, 85% of the girls attend the Spring Carnival. If 170 girls attend the carnival, how many girls are there in all?
- A) 144      B) 145      C) 200      D) 370

**Unit 2 Mastery Score:**

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