

Name \_\_\_\_\_

Mid-Term Exam January 17<sup>th</sup>

7<sup>th</sup> Grade Mid-Term Exam Review

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Chapter 1: Integers

Chapter 2: Rational Numbers

Chapter 3: Expressions and Equations

Chapter 4: Inequalities

Chapter 5: Ratios and Proportions

Complete all work on lined paper. Title your work with the chapter name. You will turn in your review on January 17<sup>th</sup>.

Write the rational number as a decimal.

1.  $\frac{7}{40}$

2.  $-\frac{1}{9}$

3.  $-\frac{21}{16}$

4.  $\frac{36}{5}$

Write the decimal as a fraction or a mixed number in simplest form.

5.  $-0.122$

6.  $0.33$

7.  $-4.45$

8.  $-7.09$

Add or subtract. Write fractions in simplest form.

9.  $-\frac{4}{9} + \left(-\frac{23}{18}\right)$

10.  $\frac{17}{12} - \left(-\frac{1}{8}\right)$

11.  $9.2 + (-2.8)$

12.  $2.86 - 12.1$

Multiply or divide. Write fractions in simplest form.

13.  $3\frac{9}{10} \times \left(-\frac{8}{3}\right)$

14.  $-1\frac{5}{6} \div 4\frac{1}{6}$

15.  $-4.4 \times (-6.02)$

16.  $-5 \div 1.5$

17.  $-\frac{3}{5} \cdot \left(2\frac{2}{7}\right) \cdot \left(-3\frac{3}{4}\right)$

18.  $-6 \cdot (-0.05) \cdot (-0.4)$

19. **ALMONDS** How many 2.25-pound containers can you make with 24.75 pounds of almonds?

20. **FISH** The elevation of a fish is  $-27$  feet.

- a. The fish decreases its elevation by 32 feet, and then increases its elevation by 14 feet. What is its new elevation?
- b. Your elevation is  $\frac{2}{5}$  of the fish's new elevation. What is your elevation?

21. **RAINFALL** The table shows the rainfall (in inches) for three months compared to the yearly average. Is the total rainfall for the three-month period greater than or less than the yearly average? Explain.

November	December	January
$-0.86$	$2.56$	$-1.24$



22. **BANK ACCOUNTS** Bank Account A has \$750.92, and Bank Account B has \$675.44. Account A changes by  $-\$216.38$ , and Account B changes by  $-\$168.49$ . Which account has the greater balance? Explain.

**Simplify the expression.**

1.  $8x - 5 + 2x$

2.  $2.5w - 3y + 4w$

3.  $3(5 - 2n) + 9n$

4.  $\frac{5}{7}x + 15 - \frac{9}{14}x - 9$

**Find the sum or difference.**

5.  $(3j + 11) + (8j - 7)$

6.  $\frac{3}{4}(8p + 12) + \frac{3}{8}(16p - 8)$

7.  $(2r - 13) - (-6r + 4)$

8.  $-2.5(2s - 5) - 3(4.5s - 5.2)$

**Factor out the coefficient of the variable.**

9.  $3n - 24$

10.  $\frac{1}{2}q + \frac{5}{2}$

**Solve the equation. Check your solution.**

11.  $7x = -3$

12.  $2(x + 1) = -2$

13.  $\frac{2}{9}g = -8$

14.  $z + 14.5 = 5.4$

15.  $-14 = 6c$

16.  $\frac{2}{7}k - \frac{3}{8} = -\frac{19}{8}$

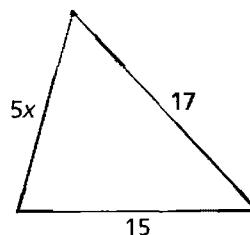
17. **HAIR SALON** Write an expression in simplest form that represents the income from  $w$  women and  $m$  men getting a haircut and a shampoo.

	Women	Men
Haircut	\$45	\$15
Shampoo	\$12	\$7

18. **RECORD** A runner is compared with the world record holder during a race. A negative number means the runner is ahead of the time of the world record holder. A positive number means that the runner is behind the time of the world record holder. The table shows the time difference between the runner and the world record holder for each lap. What time difference does the runner need for the fourth lap to match the world record?

Lap	Time Difference
1	-1.23
2	0.45
3	0.18
4	?

19. **GYMNASTICS** You lose 0.3 point for stepping out of bounds during a floor routine. Your final score is 9.124. Write and solve an equation to find your score before the penalty.
20. **PERIMETER** The perimeter of the triangle is 45. Find the value of  $x$ .



# 4 Chapter Test

Write the word sentence as an inequality.

1. A number  $k$  plus 19.5 is less than or equal to 40.
2. A number  $q$  multiplied by  $\frac{1}{4}$  is greater than  $-16$ .

Tell whether the given value is a solution of the inequality.

3.  $n - 3 \leq 4; n = 7$
4.  $-\frac{3}{7}m < 1; m = -7$
5.  $-4c \geq 7; c = -2$
6.  $-2.4m > -6.8; m = -3$

Solve the inequality. Graph the solution.

7.  $w + 4 \leq 3$
8.  $x - 4 > -6$
9.  $-\frac{2}{9} + y \leq \frac{5}{9}$
10.  $-6z \geq 36$
11.  $-5.2 \geq \frac{p}{4}$
12.  $4k - 8 \geq 20$
13.  $\frac{4}{7} - b \geq -\frac{1}{7}$
14.  $-0.6 > -0.3(d + 6)$

15. **GUMBALLS** You have \$2.50. Each gumball in a gumball machine costs \$0.25. Write and solve an inequality that represents the number of gumballs you can buy.

16. **PARTY** You can spend no more than \$100 on a party you are hosting. The cost per guest is \$8.
- a. Write and solve an inequality that represents the number of guests you can invite to the party.
  - b. What is the greatest number of guests that you can invite to the party? Explain your reasoning.



17. **BASEBALL CARDS** You have \$30 to buy baseball cards. Each pack of cards costs \$5. Write and solve an inequality that represents the number of packs of baseball cards you can buy and still have at least \$10 left.

# 5.1–5.3 Quiz



Write the ratio as a fraction in simplest form. (Section 5.1)

1. 18 red buttons : 12 blue buttons      2.  $\frac{5}{4}$  inches to  $\frac{2}{3}$  inch

Use the ratio table to find the unit rate with the specified units. (Section 5.1)

3. cost per song      4. gallons per hour

Songs	0	2	4	6
Cost	\$0	\$1.98	\$3.96	\$5.94

Hours	3	6	9	12
Gallons	10.5	21	31.5	42

Tell whether the ratios form a proportion. (Section 5.2)

5.  $\frac{1}{8}, \frac{4}{32}$       6.  $\frac{2}{3}, \frac{10}{30}$       7.  $\frac{7}{4}, \frac{28}{16}$

Tell whether the two rates form a proportion. (Section 5.2)

8. 75 miles in 3 hours; 140 miles in 4 hours  
 9. 12 gallons in 4 minutes; 21 gallons in 7 minutes  
 10. 150 steps in 50 feet; 72 steps in 24 feet  
 11. 3 rotations in 675 days; 2 rotations in 730 days

Use the table to write a proportion. (Section 5.3)

12.

	Monday	Tuesday
Dollars	42	56
Hours	6	$h$

13.

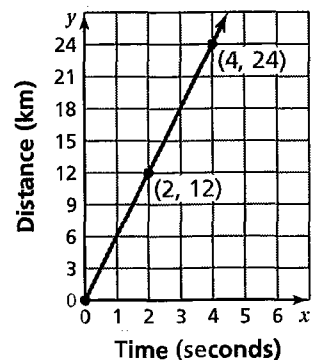
	Series 1	Series 2
Games	$g$	6
Wins	4	3

14. **MUSIC DOWNLOAD** The amount of time needed to download music is shown in the table. Find the unit rate in megabytes per second. (Section 5.1)

	6	12	18	24
	2	4	6	8

15. **SOUND** The graph shows the distance that sound travels through steel. Interpret each plotted point in the graph of the proportional relationship. (Section 5.2)

Sound through Steel



16. **GAMING** You advance 3 levels in 15 minutes. Your friend advances 5 levels in 20 minutes. Do these rates form a proportion? Explain. (Section 5.2)
17. **CLASS TIME** You spend 150 minutes in 3 classes. Write and solve a proportion to find how many minutes you spend in 5 classes. (Section 5.3)

**5.4****Practice**

For use after Lesson 5.4

Use multiplication to solve the proportion.

1.  $\frac{a}{40} = \frac{3}{10}$

2.  $\frac{6}{11} = \frac{c}{77}$

3.  $\frac{b}{65} = \frac{7}{13}$

Use the Cross Products Property to solve the proportion.

4.  $\frac{k}{6} = \frac{8}{16}$

5.  $\frac{5.4}{7} = \frac{27}{h}$

6.  $\frac{8}{11} = \frac{4}{y+2}$

Write and solve a proportion to complete the statement.

7. 42 in. = \_\_\_\_\_ cm

8. 12.6 kg  $\approx$  \_\_\_\_\_ lb

9. 3 oz  $\approx$  \_\_\_\_\_ g

10. A cell phone company charges \$5 for 250 text messages. How much does the company charge for 300 text messages?