

High School Math © 2007

Test #5

Presentation Book

Textbook

Workbook

Answer Key

BLM

Mastery Test 5— Follows Lesson 55

EXERCISE 1 TEST 5

Workbook and Textbook

Note: Students are permitted to use a calculator for only parts 12 and 13 of the test.

C
A
L
C

Note: Students are to use a calculator for only for parts 12 and 13 of the test.

- Open your workbook to test 5 at the end of your workbook. Find part 1. ✓
- This is a test. You should have only your workbook, textbook, a sharpened pencil, and lined paper.
- Work parts 1 through 12. Raise your hand when you've completed part 12.
(Observe students but do **not** give feedback.)
(After students complete part 12, permit them to use a calculator to complete part 13. Observe.)

Marking the Test

- a. (Collect the papers. Use the Answer Key to score the tests. Award scores as follows.)

TEST 5 PERCENT SUMMARY					
SCORE	%	SCORE	%	SCORE	%
44	100	39	89	34	77
43	98	38	86	33	75
42	95	37	84	32	73
41	93	36	82	31	70
40	91	35	80		

- b. (Complete the Test 5 Remedy Summary to determine whether remedies are needed. Reproducible Summary Sheets are at the back of the *Teacher's Guide*.)
- (If more than 1/4 of the students did not pass a test part, present the remedy for that part before beginning lesson 56. Remedies appear at the end of the *Test 5 Answer Key*.)

Mastery Test 5—Follows Lesson 55 Workbook

Part 1

Write the base and exponent for each fraction.

a. $\frac{p \times p \times p \times p}{p \times p \times p \times p \times p \times p \times p} = \square$

b. $\frac{4 \times 4 \times 4}{4 \times 4 \times 4} = \square$

c. $\frac{11 \times 11}{11 \times 11 \times 11 \times 11} = \square$

d. $\frac{6 \times 6 \times 6 \times 6}{6} = \square$

Part 3

Complete each boxed equation.

a. $(7 \times 7 \times 7) \times (7) \times (7 \times 7 \times 7 \times 7)$


$$7^{\square} = \square \times \square \times \square$$

b. $(m \times m) \times (m \times m \times m \times m \times m)$

$$m^{\square} = \square \times \square$$

Part 2

Figure out the function. Complete the table.

Function	
x	$\left(\frac{y}{x}\right) = y$
①	x  $= y$
3	2
②	18
③	12
④	6

This test is continued in the textbook, page T-9.

(End of WB)

Mastery Test 5—Follows Lesson 55
Textbook

Part 4

Copy and work each problem.

a. $-3.5(4) = \blacksquare$

b. $-\frac{1}{7} \left(-\frac{8}{7} \right) = \blacksquare$

c. $+2(-9) = \blacksquare$

Part 5

Solve for each letter.

a. $9n = \frac{15}{7} - 2$

b. $\frac{1}{3} = k - 1$

c. $g - \frac{2}{5}g = 3$

d. $\frac{3}{7}w + 2v = 3$

Part 6

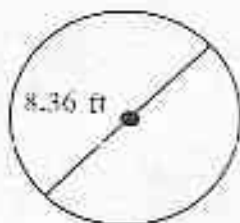
For each problem, write a letter equation. Start with the letter that answers the question. Then work the problem.

a. 280 students signed up to play football. The students were divided evenly into 8 teams. How many students were on each team?

b. The fountain pumps 240 tons of water per day. How long does it take the fountain to pump 360 tons of water?

Part 7

Answer each question.



- a. What's the radius?
b. What's the diameter?



- c. What's the radius?
d. What's the diameter?

Part 8

Copy and work each problem.

a. $-\frac{8}{3} \left(-\frac{4}{7} \right) = \blacksquare$

b. $-21 + 7 = \blacksquare$

c. $-\frac{7}{3} - \frac{2}{3} = \blacksquare$

d. $-8(+12) = \blacksquare$

Mastery Test 5 cont.

(Calculator icon, so move to end, before part 13)

*more
part 12
CALC
see
part 12*

Part 12

Write the complete equation for each item. First show the multiplication. Then show the value it equals.

a. $3^3 = \square \times \square \times \square = \square$ b. $2^4 = \square \times \square \times \square \times \square = \square$ c. $10^2 = \square \times \square = \square$

Part 10

Work each problem.

- a. Ricky had 5 assists for every 2 turnovers. During the game, Ricky had 6 turnovers. How many assists did Ricky have?
- b. There are 29 people in the symphony. 14 people in the symphony play string instruments. How many people in the symphony do not play string instruments?
- c. The number of cars crossing the bridge was $\frac{3}{5}$ the number of bicycles crossing the bridge on the same day. If 21 cars crossed the bridge, how many bicycles crossed the bridge that day?
- d. For every 9 cars in the parking lot, there are 2 motorcycles. If there are 72 cars in the parking lot, how many motorcycles are there?
- e. This month, Adam worked 17 more hours than last month. This month Adam worked 62 hours. How many hours did he work last month?

Part 11

Copy and work each problem.

a. $3x + 13 = 12x - 2x$ c. $10y - 4y = 14 + 2y - 3y$
b. $6j - 12 + 4j - 8 = 10$ d. $4p + 8 - 3p = 33$

Mastery Test 5 cont.

write
12

Part 9

Copy each fraction. Write the equivalent fraction with whole-number values. Then simplify.

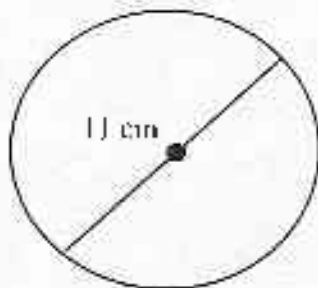
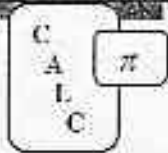
a. $\frac{.12}{.3}$

b. $\frac{.125}{.25}$

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

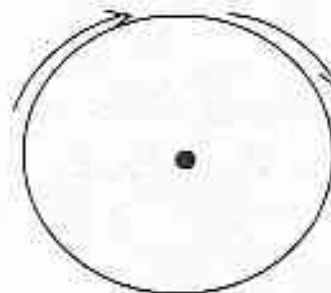
Part 13

Work each item. Round to hundredths.



a. Find the circumference.

C = 15.4 in.



b. Find the diameter.

((Calculator items come at the end.))

Part 12



a. $3^5 = \sqrt[5]{16.24} = \sqrt[5]{16.24}$ b. c.

Part 13



This goes with
ANSWER KEY

Test 5

Note: Provide any remedies for test 5 before beginning lesson 56. If more than 1/4 of the students did not pass a test part, present a remedy for that part. You are granted permission to reproduce the Remedy Summary Sheet and blackline masters (Test 5-BLM) at the back of the Teacher's Guide.

Test 5 Remedies

Test 1	Lesson	Exercise	Textbook Part	Test 5 BLM
Part 1	53	25	6	-
Part 2	47	2	-	Test 5-BLM
Part 3	51	5	5	-
Part 4	49	3	4	-
Part 5	29	5	5	-
Part 5	47	1	-	Test 5-BLM
Part 6	51	2	2	-
Part 7	53	2 (through step n)	1 and 2	-
Part 8	52	4	3	-
Part 9	47	2, 5	3	-
Part 10	53	3 (Part 5 all steps. Part 4 is optional.)	5 (4 is optional)	-
Part 11	49	5	6	-
Part 12	52	6	5	-
Part 13	50	2	3	-

((5) B pt 2))

((6) B pt 1))

and 2

12

9

Part 7 53 2 (Part 1 all steps. Part 2 steps a-d.) 1 and 2

Part 10 47 3 1
53 4 (Part 5 all steps. Part 4 is optional.) 5 (4 is optional)

10/10/08
5547
5/10/08
L553

Lesson 47

Part 1

Combining Letter Terms with Fractions

not

$$7x + \frac{2}{3}v = 5$$

$$\frac{21}{3}v + \frac{2}{3}v = 5$$

$$\frac{23}{3}v = 5$$

$$v + \frac{2}{3}v = 5$$

$$\frac{3}{3}v + \frac{2}{3}v = 5$$

$$\frac{5}{3}v = 5$$



Combine like terms. Solve for the letter.

not

a. $\frac{9}{5}v + v = 28$

b. $3j - \frac{1}{2}j + 11 - 10 = 21$

c. $0 = r + 2 - 6 - \frac{1}{5}r$

Lesson 47

Part 2

Complete each table.

Table 1

Function	
x	$\left(\frac{y}{x}\right) = y$
x	$() = y$
A	4 3
B	21
C	20

Table 2

Function	
x	$\left(\frac{y}{x}\right) = y$
x	$() = y$
A	2 6
B	12
C	9
D	1

Table 3

Function	
x	$\left(\frac{y}{x}\right) = y$
x	$() = y$
A	9 3
B	5
C	6

((Answer Key Book))
Mastery Test 5—Follows Lesson 55

TEST 5 PERCENT SUMMARY					
SCORE	%	SCORE	%	SCORE	%
44	100	40	91	35	80
43	98	39	89	34	77
42	95	38	86	33	75
41	93	37	84	32	73
40	91	36	82	31	70

TEST 5 SCORING CHART				
Part	Score	Possible Score	Passing Score	
1	1 for each item	4	3	
2	1 for each row, 1-4	4	3	
3	1 for each item	2	2	
4	1 for each item	3	3	
5	1 for each item	4	3	
6	1 for each answer item	2	2	
7	1 for each item	4	3	
8	1 for each item	4	3	
9	1 for each item	3	3	
10	1 for each item	5	4	
11	1 for each item	4	3	
12	1 for each item	3	3	
13	1 for each item	2	2	
TOTAL		44		

3 = 1-2
 not
 at 4
 no
 3
 1-2-3-4

Mastery Test 5—Follows Lesson 55 Workbook

Part 1 Write the base and exponent for each fraction.

8 gray
anno
crossouts

a. $\frac{\rho \times \rho \times \rho \times \rho}{\rho \times \rho \times \rho \times \rho \times \rho \times \rho \times \rho} = \frac{1}{\rho^3}$

b. $\frac{4 \times 4 \times 4}{4 \times 4 \times 4} = 4^0$ [for 1]

c. $\frac{11 \times 11}{11 \times 11 \times 11 \times 11} = \frac{1}{11^2}$

d. $\frac{6 \times 6 \times 6 \times 6}{6} = 6^3$

Part 3 Complete each boxed equation.

a. $(7 \times 7 \times 7) \times (7) \times (7 \times 7 \times 7 \times 7)$

$7^{\boxed{8}} = 7^{\boxed{3}} \times 7^{\boxed{1}} \times 7^{\boxed{4}}$

b. $(m \times m) \times (m \times m \times m \times m \times m)$

$m^{\boxed{7}} = m^{\boxed{2}} \times m^{\boxed{5}}$

Part 2 Figure out the function. Complete the table.

	Function	
	$x \left(\frac{y}{x}\right) = y$	
①	$x \left(\frac{2}{3}\right) = y$	
	$3 \left(\frac{2}{3}\right)$	2
②	$27 \left(\frac{2}{3}\right)$	18
③	$12 \left(\frac{2}{3}\right)$	8
④	$9 \left(\frac{2}{3}\right)$	6

② $x \left(\frac{2}{3}\right) = 18$ gray

$\left(\frac{3}{2}\right) \times \left(\frac{2}{3}\right) = 18 \left(\frac{3}{2}\right)$

$x = 27$

④ $x \left(\frac{2}{3}\right) = 6$ gray

$\left(\frac{3}{2}\right) \times \left(\frac{2}{3}\right) = 6 \left(\frac{3}{2}\right)$

$x = 9$

This test is continued in the textbook, page T-9.

ANSWER KEY

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Mastery Test 5

Textbook

[Part 4]

a. $-3.5(4) = \boxed{-14}$

b. $-\frac{1}{7}(-\frac{8}{7}) = \boxed{\frac{8}{49}}$

c. $+2(-9) = \boxed{-18}$

[Part 5]

$$\begin{aligned} a. 9n &= \frac{15}{7} - 2 \\ 9n &= \frac{15}{7} - \frac{14}{7} \\ (\frac{1}{9})9n &= \frac{1}{7}(\frac{1}{9}) \\ \boxed{n} &= \frac{1}{63} \end{aligned}$$

~~$$\begin{aligned} c. \frac{2}{5} &= 2g - g \\ (\frac{1}{2})\frac{2}{5} &= 2g(\frac{1}{2}) \\ \frac{1}{5} &= g \end{aligned}$$~~

(Part 5 c not longer fits remedial Ls 47/48/1 Combining like terms with fractions)

c. $g - \frac{2}{5}g = 3$

$\frac{5}{5}g - \frac{2}{5}g = 3$

$(\frac{5}{5})\frac{3}{5}g = 3(\frac{5}{5})$

$\boxed{g = 5}$

$$\begin{aligned} b. \frac{1}{3} &= k - 4 \\ +4 & \quad +4 \text{ [or]} \\ \frac{1}{3} + 4 &= k - 4 + 4 \\ \frac{13}{3} &= k \end{aligned}$$

$\boxed{\frac{13}{3} = k}$

d. $\frac{3}{7}w + 2w = 3$

$\frac{3}{7}w + \frac{14}{7}w = 3$

$(\frac{17}{7})\frac{17}{7}w = 3(\frac{17}{7})$

$\boxed{w = \frac{21}{17}}$

[Part 6]

a. $s = (\frac{s}{t})t$

$s = (\frac{280}{8})1$

$s = 35$

 $\boxed{35 \text{ students}}$

b. $d = (\frac{d}{t})t$

$d = (\frac{1}{24})360$

$d = \frac{3}{2}$

$\boxed{1\frac{1}{2} \text{ days}}$

[Part 7]

a. $\boxed{4.18 \text{ ft}}$

b. $\boxed{8.36 \text{ ft}}$

c. $\boxed{7.15 \text{ m}}$

d. $\boxed{14.30 \text{ m}}$

Mastery Test 5

Textbook

[Part 8]

$$a. -\frac{8}{3}(-\frac{4}{7}) = \boxed{+\frac{32}{21}} \quad b. -21 + 7 = \boxed{-14} \quad c. -\frac{7}{3} - \frac{2}{3} = \boxed{-\frac{9}{3}} \quad d. -8(12) = \boxed{-96}$$

[Part 9]

$$a. 3^5 = \boxed{3 \times 3 \times 3 \times 3 \times 3 = 243} \quad b. 2^4 = \boxed{2 \times 2 \times 2 \times 2 = 16} \quad c. 10^3 = \boxed{10 \times 10 \times 10 = 1000}$$

Moved to end before Part 13

[Part 10]

$$a. a = \left(\frac{a}{\frac{1}{t}}\right) t$$

$$a = \left(\frac{5}{2}\right) 6$$

$$a = 15$$

$$\boxed{15 \text{ assistants}}$$

$$b. p = s + ns$$

$$29 = 1 + ns$$

$$\frac{-14}{-14} \quad \frac{-14}{-14}$$

$$15 = ns$$

$$\boxed{15 \text{ people}}$$

$$c. c = \frac{3}{5} b$$

$$\left(\frac{5}{3}\right) 21 = \frac{3}{5} b \left(\frac{5}{3}\right)$$

$$35 = b$$

$$\boxed{35 \text{ bicycles}}$$

$$e. tm = lm + 17$$

$$62 = lm + 17$$

$$\frac{-17}{-17} \quad \frac{-17}{-17}$$

$$45 = lm$$

$$\boxed{45 \text{ hours}}$$

$$d. m = \left(\frac{m}{a}\right) c$$

$$m = \left(\frac{2}{9}\right) 12$$

$$m = 16$$

$$\boxed{16 \text{ motorcycles}}$$

[Part 11]

$$a. 3x + 13 = 12x - 2x$$

$$3x + 13 = 10x$$

$$\frac{-3x}{-3x} \quad \frac{-3x}{-3x}$$

$$\left(\frac{1}{7}\right) 13 = 7x \left(\frac{1}{7}\right)$$

$$\boxed{\frac{13}{7} = x}$$

$$c. 10y - 4y = 14 + 2y - 3y$$

$$6y = 14 - y$$

$$\frac{+y}{+y} \quad \frac{+y}{+y}$$

$$\left(\frac{1}{7}\right) 7y = 14 \left(\frac{1}{7}\right)$$

$$\boxed{y = 2}$$

$$b. 6j - 12 + 4j - 8 = 10$$

$$10j - 20 = 10$$

$$\frac{+20+20}{+20+20}$$

$$\left(\frac{1}{10}\right) 10j = 30 \left(\frac{1}{10}\right)$$

$$\boxed{j = 3}$$

$$d. 4p + 8 - 3p = 33$$

$$p + 8 = 33$$

$$\frac{-8}{-8} \quad \frac{-8}{-8}$$

$$\boxed{p = 25}$$

Miscellaneous

$$\begin{array}{r} 13 \\ \times 3 \\ \hline 39 \\ 27 \\ \times 3 \\ \hline 81 \\ 13 \\ \hline 243 \end{array}$$

ANSWER KEY

Test 5

Page 4 of 4

New part 12 & 13
 [Part 13] ((Moved to end because of calculator))

$$\begin{aligned} a. C &= \pi d \\ C &= \pi(11) \\ C &= 34.557 \end{aligned}$$

$$\boxed{34.56 \text{ cm}}$$

$$\left[\begin{array}{l} \text{without } \pi \text{ key} \\ 34.54 \text{ cm} \end{array} \right]$$

$$\begin{aligned} b. C &= \pi d \\ \left(\frac{1}{\pi}\right) 15.4 &= \pi d \left(\frac{1}{\pi}\right) \\ 4.901 &= d \end{aligned}$$

$$\boxed{4.90 \text{ in.}}$$

$$\left[\begin{array}{l} \text{without } \pi \text{ key} \\ \text{same: } 4.90 \text{ in.} \end{array} \right]$$

[Part ~~11~~ 9]

$$a. \frac{12}{30} = \frac{2}{5}$$

move above
part 10

$$b. \frac{125}{250} = \frac{1}{2}$$

$$c. \frac{400}{360} = \frac{100}{9}$$

[Part 12]

$$a. 3^5 = \boxed{3 \times 3 \times 3 \times 3 \times 3} = \boxed{243} \quad b. 2^4 = \boxed{2 \times 2 \times 2 \times 2} = \boxed{16} \quad c. 10^3 = \boxed{10 \times 10 \times 10} = \boxed{1000}$$

[Part 13]

$$a. C = \pi d$$