

# High School Math © 2007

Test 7

**Presentation Book**

**Textbook**

**Workbook**

**Answer Key**

## Mastery Test 7—Follows Lesson 75 Workbook

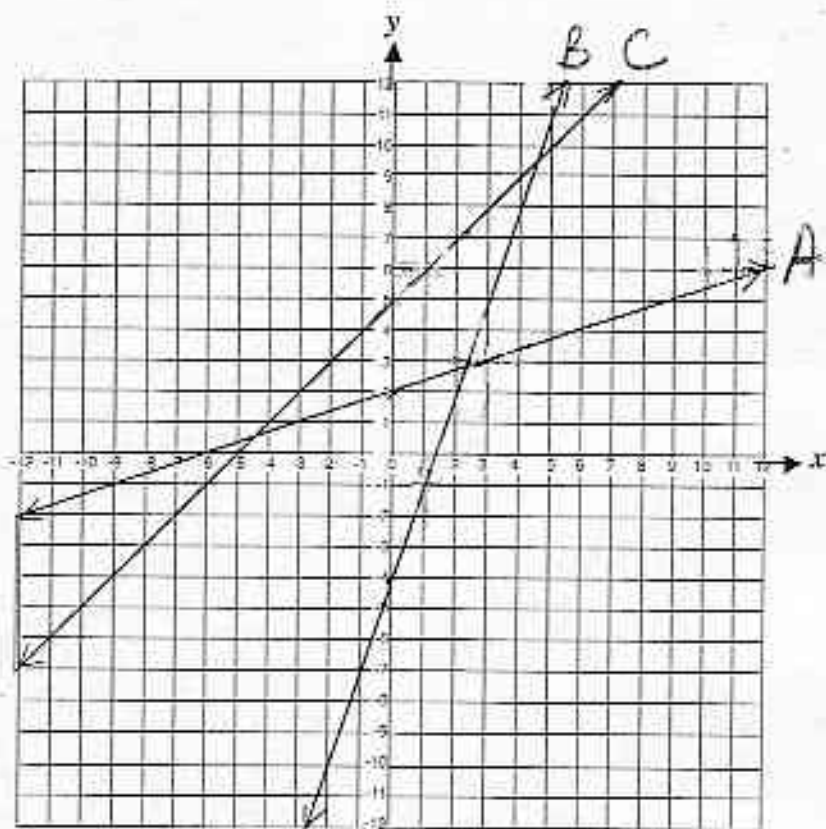
**Part 1**

Plot a point for each line. Then write the complete equation for each line.

A

B

C



**Part 2**

Rewrite each expression below with combined exponents.

a.  $x^{-4} p n^2 n^0 p^3$

b.  $5^1 m^9 m^{-6} 5^{-3} k$

c.  $y^{-2} d^3 y^{-4} y^5 d^2$

((3 blue patches, no outline))

This test is continued in the textbook, page T-14.

T-7

**Mastery Test 7—Follows Lesson 75  
Textbook**

**Part 3**

**Work each item.**

- a. 15 of the 60 vehicles are cars. What percent of the vehicles are cars?
- b. There are 18 black-and-white photos in the album. If there are 90 photos in the album, what fraction of the photos are black-and-white?

**Part 4**

**Copy and solve each equation.**

a.  $-2p = -10$

b.  $3 - 7m = 17$

**Part 5**

**Answer each question.**

- a. How many degrees are in the corner of a rectangle?
- b. How many degrees are in a circle?
- c. How many degrees are in a straight line?
- d. How many  $90^\circ$  angles are in a circle?

**Part 6**

**Copy and work each problem.**

a.  $3(-6)(-4) - 7 - 5 = \boxed{22}$     b.  $-9(5) + 3 + 8 - 2(6) = \boxed{-31}$     c.  $+9 + 7(4)(-2)(-1) = \boxed{59}$

**Part 7**

**Work each problem. If a problem tells about the difference, first write a letter equation.**

- a. Tom lifts 74 pounds. Jack lifts 103 pounds. How many more pounds does Jack lift than Tom?
- b. A bird weighs 49 ounces. A cat is 27 ounces heavier than the bird. How much does the cat weigh?
- c. Kevin works 92 hours. Brenda works 73 hours. How many fewer hours does Brenda work than Kevin?

### Mastery Test 7 cont.

#### Part 8

Solve 1 equation for a letter. Then substitute and solve the other equation.

a.  $\frac{3}{9}j = v$        $\frac{6}{9}j = r$        $r = 18$        $v = ?$

b.  $\frac{4}{5}f = p$        $\frac{1}{4}f = g$        $p = 28$        $g = ?$

#### Part 9

Solve each problem.

- A bus travels at 52 miles per hour. How far will the bus go in 2.5 hours?
- Every 3 months, a lawyer reads 126 briefs. How many briefs per month does the lawyer read?
- Mr. Knight files 84 folders in 40 minutes. What's his rate of filing folders?
- Joe earns \$18 for every 4 cars that he washes. How many cars would he have to wash to earn \$72?
- A train travels 135 miles in 3 hours. What's the train's average rate?

#### Part 10

Solve for the letter.

a.  $-(-5 + 5p) + 6p = -8$

b.  $-4 = (-4m + 9 + m) - 13$

#### Part 11

Work each problem.

- $\frac{1}{6}$  of the dogs have spots. 24 dogs have spots. How many dogs do not have spots?
- Jim spent  $\frac{2}{5}$  of his paycheck on rent. Jim spent \$720 on things that were not rent. How much was Jim's paycheck?
- $\frac{3}{7}$  of the houses were single-story. The rest had two stories. There were 49 houses. How many two-story houses were there?

### Mastery Test 7 cont.

#### Part 12

Substitute, then solve each equation.

a.  $(-4 + 8k + 1)r = 15$

$k = 6$

b.  $0 = 8 - 4(6p - 5 + 3w)$

$w = \frac{1}{3}$

#### Part 13

Write the equation for each sentence.

a. The dresser weighs 15 pounds less than 3 times the table's weight.

b. This year's profit is \$5,000 more than 75% of last year's profit.

c. Andrea walked 6 fewer miles than  $\frac{9}{5}$  the distance that Billy walked.

#### Part 14

Copy each equation. Solve for the letter.

a.  $5r - 2 = -r + 4$

b.  $8 + \frac{3}{4}p = \frac{7}{4}p - 4$

c.  $6 - q = 4 - 2q$

#### Part 15

Rewrite each expression <sup>beginning</sup> with a number that has no exponent.

C  
A  
L  
C

a.  $r^3 10^{-2} m$

b.  $5^4 p^{10} x^{-2}$

c.  $a^4 2^{-5}$

# Mastery Test 7— Follows Lesson 75

## EXERCISE 1 TEST 7 Workbook and Textbook [

**Note:** Students are to use a calculator only for part 15 of the test.

C  
A  
L  
C

- a. Open your workbook to test 7 at the end of your workbook. Find part 1.  $\sqrt{\quad}$
- b. This is a test. You should have only your workbook, textbook, a sharpened pencil, and lined paper.
- c. Work parts 1 through 14. Raise your hand when you've completed part 14.  
(Observe students but do **not** give feedback.)
- (After students complete part 14, permit them to use a calculator to complete part 15. Observe.)

### Marking the Test

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

| SCORE | %   | SCORE | %  | SCORE | %  |
|-------|-----|-------|----|-------|----|
| 43    | 100 | 36    | 88 | 33    | 77 |
| 42    | 98  | 37    | 86 | 32    | 74 |
| 41    | 95  | 36    | 84 | 31    | 72 |
| 40    | 93  | 35    | 81 | 30    | 70 |
| 39    | 91  | 34    | 79 |       |    |

- b. (Complete the Test 7 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 76. Remedies appear at the end of the Test 7 Answer Key.)

# Test 7

**Note:** Provide any remedies for test 7 before beginning lesson 76. If more than 1/4 of the students did not pass a test part, present a remedy for that part. You may reproduce the Remedy Summary Sheet and blackline masters (Test 7-BLM) at the back of the Teacher's Guide.

## Test 7 Remedies

| Test 1  | Lesson        | Exercise                      | Textbook Part | Test 7 BLM               |
|---------|---------------|-------------------------------|---------------|--------------------------|
| Part 1  | 69            | 4                             | 5             | -                        |
| Part 2  | <del>69</del> | <del>1</del>                  | <del>5</del>  | Test 7-BLM Part 1 and 2  |
| Part 3  | 73            | 4                             | 5             | -                        |
| Part 4  | 66            | 3                             | 4             | -                        |
| Part 5  | 75            | 4 (Oral practice step A only) | -             | -                        |
| Part 6  | 73            | 2                             | 2             | -                        |
| Part 7  | 68            | 2                             | 3             | -                        |
| Part 8  | 66            | 4                             | 5             | -                        |
| Part 9  | 72            | 2                             | 2             | -                        |
| Part 10 | 65            | 2                             | 2             | -                        |
| Part 11 | 72            | 5                             | 6             | -                        |
| Part 12 | 68            | 5                             | 6 and 7       | -                        |
| Part 13 | 75            | 5                             | 7             | -                        |
| Part 14 | 68            | 3                             | 4             | -                        |
| Part 15 | 69            | 1                             | -             | Test 7-BLM Parts 1 and 2 |

more part 2 was same as part 15

~~pt 14 remedy has a fraction but the 3rd part of fraction is a bit hard~~

6

Lesson 59

Part 1

Simplifying Expressions with Exponents

minus  
3/23



$$m^0 5^2 5 = 5^3 m^0 = 125m^0$$

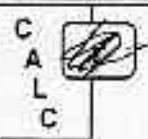
• Write the number value first, then the letter value.

$$k^{-1} 2^3 b^{-2} k^2 2^7 = 2^{-4} kb^{-2} = \frac{1}{16} kb^{-2}$$

• If the number has a negative exponent, write it as a fraction.

Part 2

Simplify. First rewrite the expression with a number base. Then write the expression with a number that has no exponent.



a.  $r^3 r^3 15^3 r$

d.  $g^{-1} n^2 10^3 n 10^{-1}$

about 5 pi # x 4

b.  $7^3 k^3 7^2 k^{-2}$

e.  $3^2 p^3 p^{-1} 3^{-5} d^{-10}$

c.  $b^{-3} b 4^2 m^{-1} 4^{-5}$

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Test 7 - BLM mockup  
 (use 4/10/03 WB but no blue, no stars)

Lesson 69 ← Lesson 69 [54] Workbook

Part 1 Simplifying Expressions with Exponents



$$m^6 5^2 5 = 5^3 m^6 = 125m^6$$

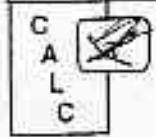
• Write the number value first, then the letter value.

$$k^{-1} 2^3 b^{-2} k^2 \frac{2^4}{k} = 2^{-4} kb^{-2} = \frac{1}{16} kb^{-2}$$

• If the number has a negative exponent, write it as a fraction.

Part 2

Simplify. First rewrite the expression with a number base first. Then write the expression with a number that has no exponent.



a.  $j^{-3} r^3 15^3 r$



b.  $7^3 k^3 7^2 k^{-2}$

c.  $b^{-3} 0 4^2 m^{-1} 4^{-5}$

d.  $3^{-1} n^2 10^3 n 10^{-1}$

e.  $3^2 p^3 p^{-1} 3^{-5} d^{-10}$

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Test 7 - BLM

**((Answer Key Book))  
Mastery Test 7—Follows Lesson 75**

| TEST 7 PERCENT SUMMARY |     |       |    |       |    |
|------------------------|-----|-------|----|-------|----|
| SCORE                  | %   | SCORE | %  | SCORE | %  |
| 43                     | 100 | 38    | 88 | 33    | 77 |
| 42                     | 98  | 37    | 86 | 32    | 74 |
| 41                     | 95  | 36    | 84 | 31    | 72 |
| 40                     | 93  | 35    | 81 | 30    | 70 |
| 39                     | 91  | 34    | 79 |       |    |

*Bernie will be revising*

| TEST 7 SCORING CHART |                     |                |               |
|----------------------|---------------------|----------------|---------------|
| Part                 | Score               | Possible Score | Passing Score |
| 1                    | 1 for each equation | 3              | 3             |
| 2                    | 1 for each item     | 3              | 2             |
| 3                    | 1 for each item     | 2              | 2             |
| 4                    | 1 for each item     | 2              | 2             |
| 5                    | 1 for each answer   | 4              | 4             |
| 6                    | 1 for each item     | 3              | 3             |
| 7                    | 1 for each item     | 3              | 3             |
| 8                    | 1 for each item     | 2              | 2             |
| 9                    | 1 for each item     | 5              | 4             |
| 10                   | 1 for each item     | 2              | 2             |
| 11                   | 1 for each item     | 3              | 3             |
| 12                   | 1 for each item     | 2              | 2             |
| 13                   | 1 for each item     | 3              | 3             |
| 14                   | 1 for each item     | 3              | 2             |
| 15                   | 1 for each item     | 3              | 3             |
| <b>TOTAL</b>         |                     | <b>43</b>      |               |

*will be revised*

## Mastery Test 7—Follows Lesson 75 Workbook

### Part 1

Plot a point for each line. Then write the complete equation for each line.

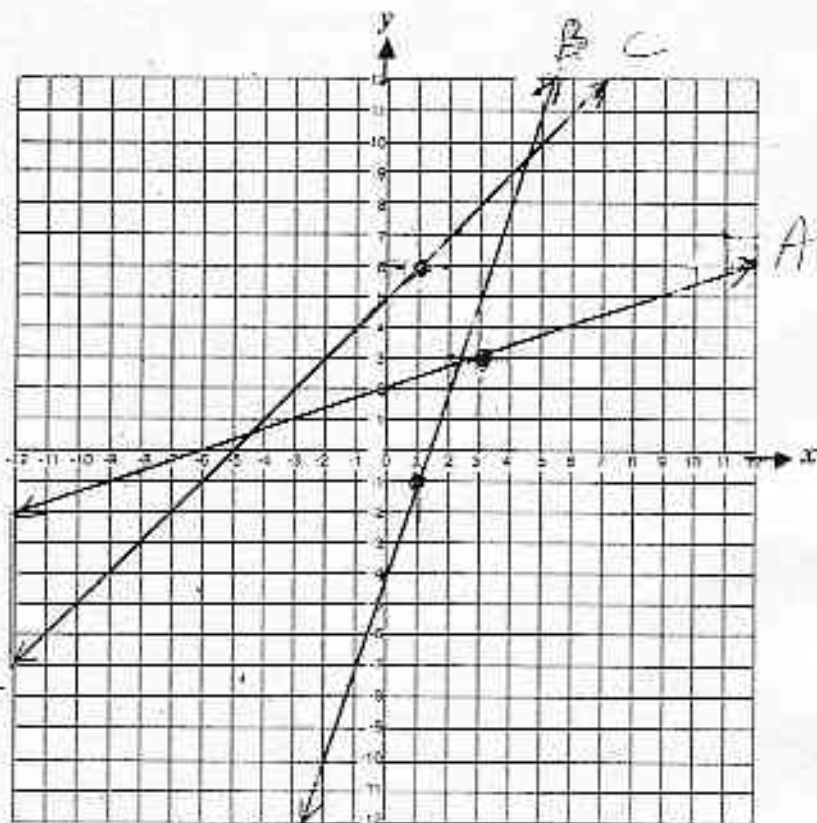
ghost  $y = mx + b$

A  $y = \frac{1}{3}x + 2$

B  $y = 3x - 4$

C  $y = x + 5$

((3 blue patches,  
2x4pi no outline))



(anno points  
@ (3, 3)  
@ (1, 1)  
@ (3, 6))

### Part 2

Rewrite each expression below with combined exponents.

a.  $x^{-4} p n^2 n^{-6} p^3$

$x^{-4} p^4 n^{-4}$

ghost  
b.  $5^4 m^9 m^{-6} 5^{-1} k$   
 $5^3 m^3 k$

c.  $y^{-2} d^9 y^{-8} y^5 d^2$

$y^{-5} d^{11}$

((3 blue patches, no outline))

This test is continued in the textbook, page T-14.

[Part 3]

a.  $\frac{p}{100}(v) = c$

$$\left(\frac{100}{60}\right) \frac{p}{100} (60) = 15 \left(\frac{100}{60}\right)$$

$$p = 25$$
  
$$\boxed{25\%}$$

b.  $f(p) = b$

$$\left(\frac{1}{90}\right) f(90) = 18 \left(\frac{1}{90}\right)$$

$$\boxed{f = \frac{1}{5}}$$

[Part 4]

a.  $-2p = -10$

$$\left(\frac{1}{2}\right) 2p = 10 \left(\frac{1}{2}\right)$$

$$\boxed{p = 5}$$

b.  $3 - 7m = 17$

$$\begin{array}{r} 3 - 7m = 17 \\ -3 \quad -3 \\ \hline \end{array}$$

$$-7m = 14$$

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

$$\boxed{m = -2}$$

[Part 5]

a.  $90^\circ$  b.  $360^\circ$  c.  $180^\circ$  d.  $i$ 

[Part 6]

a.  $3(-6)(-4) - 7 - 5 =$

$$72 - 7 - 5 = \boxed{+60}$$

b.  $-9(5)(+3) + 2 - 2(6) =$

$$-135 + 8 - 12 = \boxed{-139}$$

c.  $+9 + 7(+)(-2)(-1) = \boxed{+65}$

$$+9 + 56$$

# ANSWER KEY

## Test 7

[Part 7]

a.  $103$

$-74$

$29$  [more] pounds

b.  $c = b + 27$

$c = 49 + 27$

$c = 76$

$76$  ounces

c.  $92$

$-73$

$19$  [fruits]

(a & c s/b simple subtraction only b s/b letter equation. Ex: how many points left if 15 vs answer, part 8 says not to do it))

[Part 8]

a.  $\frac{3}{9}j = v$

$\frac{6}{9}j = r$  ( $r=18$ )

b.  $\frac{4}{5}l = p$

$\frac{1}{4}f = g$  ( $f=28$ )

$\frac{3(27)}{9} = v$

$\left(\frac{9}{6}\right)\frac{6}{9}j = 18\left(\frac{9}{6}\right)$

$\left(\frac{5}{5}\right)\frac{28}{5} = p$

$\frac{1}{9}(35) = g$

$9 = v$

$j = 27$

$l = 35$

$\frac{35}{9} = g$

[Part 9]

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

$m = \left(\frac{62}{1}\right)2.5$

$m = 130$

$130$  miles

c.  $\frac{f}{m} = \frac{f}{m}$

$\frac{f}{m} = \frac{84}{40}$

$2\frac{1}{2}$  tickets per minute

e.  $\frac{m}{h} = \frac{m}{h}$

$\frac{m}{h} = \frac{135}{3}$

$45$  m. per hr

b.  $\frac{b}{m} = \frac{b}{m}$

$\frac{b}{m} = \frac{3}{126}$

$42$  briets per month

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

$c = \left(\frac{14}{18}\right)72$

$c = 56$

$11\frac{1}{2}$  cars

[Part 10]

a.  $(-5 + 5p) + 6p = -8$

$$-5 - 5p + 6p = -8$$

$$5 + p = -8$$

$$\begin{array}{r} 5 + p = -8 \\ -5 \phantom{+ p} = -5 \\ \hline p = -1 \end{array}$$

$$\boxed{p = -1}$$

b.  $-4 = (-1m + 9 + m)3 - 12$

$$-4 = (-3m + 9)3 - 12$$

$$-4 = -9m + 27 - 12$$

$$-4 = -9m + 14$$

$$\begin{array}{r} -4 = -9m + 14 \\ -14 \phantom{= -9m} = -14 \\ \hline -18 = -9m \end{array}$$

$$-18 = -9m$$

$$\left(\frac{1}{9}\right) 18 = 9m \left(\frac{1}{9}\right)$$

$$\boxed{2 = m}$$

[Part 11]

a.  $\frac{1}{5}d = 5$   $\frac{5d}{5} = 15$   $\boxed{d = 15}$

$$(6) \frac{1}{6}d = 24(6) \quad \frac{6d}{6} = 144$$

$$\boxed{d = 144}$$

$$120 = 15$$

$$\boxed{120 \text{ dogs}} \quad \text{[no spots]}$$

c.  $\frac{3}{7}h = 55$   $\frac{4h}{7} = 15$

$$\frac{4}{7}(49) = 15$$

$$28 = 15$$

$$\boxed{28 \text{ houses}}$$

b.  $\frac{2}{5}p = r$   $\frac{3}{5}p = nr$   $\boxed{nr = 120}$

$$\left(\frac{5}{3}\right) \frac{3}{5}p = 720 \left(\frac{5}{3}\right)$$

$$p = 1200$$

$$\boxed{\$1200}$$

[Part 12]

a.  $(-4 + 8k + 1)r = 15$

$$\left(-4 + 8(6) + 1\right)r = 15 \quad \leftarrow \text{ghost}$$

$$\left(\frac{1}{45}\right) (45)r = 15 \left(\frac{1}{45}\right)$$

$$\boxed{r = \frac{1}{3}}$$

b.  $0 = 8 - 4(6p - 5 + 3w)$

$$\text{posit } 0 = 8 - 4(6p - 5 + 3\left(\frac{1}{3}\right))$$

$$0 = 8 - 4(6p - 4)$$

$$0 = 8 - 24p + 16$$

$$0 = 24 - 24p$$

$$\begin{array}{r} 0 = 24 - 24p \\ -24 \phantom{= 24} = -24 \\ \hline -24 = -24p \end{array}$$

$$-24 = -24p$$

$$\left(\frac{1}{24}\right) 24 = 24p \left(\frac{1}{24}\right)$$

$$\boxed{1 = p}$$

ANSWER KEY Test 7 Page 5 of 5

[Part 13]

a.  $d = 3t - 15$     b.  $t = \frac{75}{100}k + 5000$     c.  $A = \frac{9}{5}B - 6$

[Part 14]

a.  $5r - 2 = -r + 4$     b.  $8 + \frac{3}{4}p = \frac{7}{4}p - 4$     c.  $6 - q = 4 - 2q$

$$\begin{array}{r} +r \qquad +r \\ \hline 6r - 2 = 4 \end{array}$$

$$\begin{array}{r} -\frac{3}{4}p \quad -\frac{3}{4}p \\ \hline 8 = \frac{4}{4}p - 4 \end{array}$$

$$\begin{array}{r} +2 \quad +2 \\ \hline 6r = 6 \end{array}$$

$$\begin{array}{r} +4 \qquad +4 \\ \hline 12 = p \end{array}$$

$$\begin{array}{r} +2q \quad +2q \\ \hline 6 + q = 4 \\ -6 \quad -6 \\ \hline q = -2 \end{array}$$

$(\frac{1}{6})6r = 6(\frac{1}{6})$      $r = 1$      $(\frac{1}{12})12 = p$      $p = 1$      $q = -2$

[Part 15]

a.  $r^3 10^{-2} m = 10^{-2} r^3 m = \frac{1}{100} r^3 m$

b.  $5^4 p^{10} x^{-2} = 625 p^{10} x^{-2}$

ghost... c.  $a^4 2^{-5} = 2^{-5} a^4 = \frac{1}{32} a^4$