Test Bank for College Mathematics 9th Edition by Cleaves

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MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.
1) By examining the last digit of 3,455 only, which number is it divisible by?
1)

A) 5 B) 4 C) 9 D) 6

2) 6, 9, and 18 are all multiples of which number? 2)

A) 2 B) 6 C) 3 D) 972

3) By only examining the last two digits of 6,380, which number is it divisible by? 3)

A) 9 B) 4 C) 2 D) 8

4) Which rule guarantees 927 is divisible by 3? 4)

A) The last digit is even and 24 is divisible by 6.

- B) The last digit is even and the sum of the digits is divisible by 3.
- C) The last two digits are even.
- D) The sum of the digits is divisible by 3.
- 5) Which basic arithmetic operation is implied when you use the word "factor"? 5)
- A) Subtraction B) Addition

C) Division D) Multiplication 6) Which rule guarantees 4,150 is divisible by 5? 6) A) At least two of the digits are even. B) There are two consecutive digits that are divisible by 8. C) The last three digits form a number divisible by 5. D) The last digit is a zero. 7) 140 is divisible by which two numbers? 7) A) 5 and 3 B) 2 and 7 C) 2 and 9 D) 10 and 8 8) Identify the list that is a list of multiples of 25. 8) A) 25, 50, 75, 140, 175 B) 25, 75, 125, 155, 175 C) 25, 50, 100, 270, 400 D) 25, 50, 75, 100, 125

- 9) 3, 6, and 9 are multiples of which number? 9)
- A) 9 B) 2 C) 3 D) 6
- 10) Which of the following numbers is a composite number? 10)
- A) 61 B) 34 C) 47 D) 53
- 11) Which is a list of the factors of 21? 11)

A) 3, 6, 9, 12, 15, 18 B) 1, 3, 7, 21

C) 1, 2, 3, 6, 9, 18 D) 2, 4, 6, 8, 10, 12, 14, 16, 18

- 12) 1 and 30, 2 and 15, 3 and 10, and 5 and 6 are all factor pairs of which number?
 12)

 A) 3
 B) 131,056
 C) 60
 D) 30
- 13) Which of the following is not a factor of 348? 13)

A) 34 C) 8 D) 2 B) 4

14) Which list contains all the factor pairs of 36? 14)

A) 1(36), 2(18), 4(9) B) 1(36), 6(6) C) 1(36), 2 (18), 3(12), 4(9), 6(6) D) 1(36), 2 (18), 3(12), 6(6)

15) 15 is not a prime number because 15)

- A) its factor pairs are 3×5 .
- B) it has 1 as a factor.
- C) its factor pairs are 1×15 , 3×5 .
- D) 15 is not divisible by any number except 1 and itself.

16) Which of the following is a prime number? 16)

A) 55 B) 29 C) 39 D) 42

17) List the factor pairs of 36 and write all the factors in order from smallest to 17) largest.

A) 1 × 36, 6 × 6; 1, 6, 36 B) 1 × 36; 1, 2, 3, 4, 6, 9, 12, 18, 36 C) 1 × 36, 2 × 18, 3 × 12, 4 × 9, 6 × 6; 1, 2, 3, 4, 6, 9, 12, 18, 36 D) 1 × 36, 3 × 12, 6 × 6

18) Find the prime factorization of 72. 18)

A) $1 \cdot 2 \cdot 2 \cdot 2 \cdot 3 \cdot 3$

B) 8 · 9 C) $2 \cdot 2 \cdot 2 \cdot 3 \cdot 3$ D) $2 \cdot 3 \cdot 3 \cdot 4$

19) Which list contains both even numbers and odd numbers? 19)

A) 4, 10, 12, 20, 28 B) 5, 10, 15, 20, 40 C) 6, 30, 40, 50, 60 D) 2, 4, 6, 8, 10 20) Determine the composite number represented by 22(33)(5). 20)

> A) 180 B) 108 C) 540 D) 30

21) Which number is neither prime nor composite? 21)

> A) 3 B) 2 C) 1 D) 4

22) Find the prime factorization of 1,260. 22)

A) $1 \cdot 4 \cdot 5 \cdot 7 \cdot 9$ B) $2 \cdot 2 \cdot 3 \cdot 3 \cdot 35$

C) $2 \cdot 2 \cdot 3 \cdot 3 \cdot 5 \cdot 7$ D) $2 \cdot 2 \cdot 2 \cdot 3 \cdot 5 \cdot 5$ 23) Write the prime factors of 360 in exponential notation. 23)	
A) 2×2×2×3×3×5 B) 23×32×5 C) 2×2×3×3×3×5 D) 22×33×5	
24) Write the prime factorization of 1,800 using exponential notation. 24))
A) 2·2·2·3·3·5·5 B) 23·32·52 C) 23·9·52 D) 18·100	
25) Write the prime factorization of 120, using exponential notation. 25)	
A) 23 (3)(5) B) 2 (2)(2)(3)(5) C) 23 (2)(2)(5) D) 24 (3)(5)	
26) Write the prime factorization of 1,800, using exponential notation. 26))
A) 23 (32)(52) B) 22 (33)(52)	
C) 2 (32)(102) D) 2 (2)(2)(3)(3)(5)(5)	
27) Which is the least common multiple of 6 and 9? 27)	
A) 54 B) 9 C) 18 D) 6	
28) Which is the least common multiple of 4 and 15? 28)	
A) 30 B) 60 C) 4 D) 15	
29) Find the greatest common factor of 6 and 15. 29)	
A) 90 B) 3 C) 15 D) 1	
30) Find the greatest common factor of 20 and 28.30)	
A) 2 B) 4 C) 1 D) 140	
31) Find the least common multiple of 12, 24, and 30. 31)	
A) 6 B) 12 C) 24 D) 120	
32) Find the greatest common factor of 6, 9, and 10. 32)	
A) 3 B) 1 C) 6 D) 90	
33) Which is the least common multiple of 4 and 12? 33)	
A) 4 B) 48 C) 12 D) 2	

34) Find the greatest common factor of 42, 84, and 210. 34) A) 7 B) 14 C) 42 D) 21 35) Which is the least common multiple of 2, 7, and 14? 35) A) 14 B) 7 C) 196 D) none of the above 36) Which is the least common multiple of 12, 18, and 30? 36) A) 180 B) 6 C) 6,480 D) 1,620 37) Find the greatest common factor of 14, 21, and 35. 37) A) 2 B) 210 C) 7 D) 10,290 38) Find the greatest common factor of 26 and 52. 38) A) 676 B) 26 C) 13 D) 1 39) Which of the following list of fractions is equivalent to $\overline{10}$? 39) A) $\frac{14}{20}$, $\frac{9}{40}$, $\frac{35}{50}$, $\frac{49}{70}$, $\frac{70}{100}$ B) $\frac{7}{20}$, $\frac{7}{40}$, $\frac{7}{50}$, $\frac{7}{70}$, $\frac{7}{100}$ $\begin{array}{c} \frac{14}{10}, \frac{28}{10}, \frac{35}{10}, \frac{49}{10}, \frac{70}{10} \end{array}$ D) $\frac{14}{20}$, $\frac{28}{40}$, $\frac{35}{50}$, $\frac{49}{70}$, $\frac{70}{100}$ 40) Which of the following fractions is equivalent to $\frac{1}{4?}$ 40) $\frac{15}{20} \xrightarrow{15} (15) = 10$ A) $\frac{15}{3}$ 4 ? 41) Find the equivalent fraction having the denominator indicated in = 41) 9 27 A) $\frac{12}{27}$ B) 8/27 C) $\frac{4}{27}$ D) 27 16 42) Reduce $\overline{20}$ to lowest terms. 42) C) $\frac{4}{5}$ 16 A) 20 B) 10 D) 1

43) If each inch of an English rule is divided into 64 units, what part of an inch would be measured by 3 of the units?

A) $\frac{3}{64}$ inch	B) 3 inches	C) $\frac{1}{4}$ inch	D) $\frac{3}{8}$ inch
44) Reduce $\frac{24}{36}$ to lowes	t terms. 44)		
A) 4/6	B) 24 B) 36	C) 12	D) 2/3

43)

	48
45) Si	implify 96. 45)
	3
	A) 4
	1
	B) 4
	2
	C) 3
	1
	D) 3
	E) none of the above

46)

46) Write 11 ÷ 25 in fraction form.

3	25	3	11
A) 211	B) 11	C) 225	D) 25

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

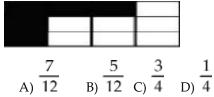
47) Use a U.S. customary ruler to measure the line below to the nearest eighth 47) of an inch:

- 48) Use a U.S. customary ruler to measure the line below to the nearest fourth 48) of an inch:
- 49) Use a U.S. customary ruler to measure the line below to the nearest sixteenth ⁴⁹) of an inch:

50) Use a U.S. customary ruler to measure the line below to the nearest half inch: 50)

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

54) Write a fraction to represent the shaded portion of a given figure. 54)



55) Write a fraction to represent 4 out of 5 kittens in a litter.



55)

57) Reduce $\frac{50}{100}$ to lowest terms. 56) A) 0.5 B) $\frac{1}{2}$ C) $\frac{5}{10}$ D) $\frac{10}{20}$

58) Reduce $\frac{24}{75}$ to lowest terms. 57) A) $\frac{6}{25}$ B) $\frac{8}{25}$ C) $\frac{3}{25}$ D) $\frac{24}{50}$ 59) Reduce 180 to lowest terms. 58)

D)

C)

60) Which fraction is equivalent to $\frac{7}{8}$ and has a denominator of 56? 59) A) $\frac{56}{64}$ B) $\frac{35}{56}$ C) $\frac{49}{56}$ D) $\frac{15}{56}$

61) Which fraction is equivalent to $\frac{3}{5}$ and has a denominator of 30? 60) (A) $\frac{18}{30}$ (B) $\frac{9}{30}$ (C) $\frac{30}{50}$ (D) $\frac{3}{30}$ (E) $\frac{3}{30}$

62) Which fraction is equivalent to $\frac{4}{7}$ and has a denominator of 28? 61) (A) $\frac{3}{28}$ (B) $\frac{16}{28}$ (C) $\frac{28}{49}$ (D) $\frac{8}{28}$

63) If each inch on a U.S. customary rule is divided into 32 parts, what part of an 62)

inch would be indicated by the 5th hash mark in a inch? (Illustrate with a

drawing.)

A) $\frac{5}{64}$ inch B) $\frac{5}{32}$ inch C) $\frac{5}{16}$ inch D) $\frac{1}{4}$ inch

63) If one inch on a U.S. customary rule is divided into 16 parts, what is the length of 63) each part of the inch?

 $\frac{1}{A} = \frac{1}{17} \text{ inch} \qquad B = 16 \text{ inches} \qquad C = \frac{1}{16} \text{ inch} \qquad D = \frac{1}{4} \text{ inch}$

ESSAY. Write your answer in the space provided or on a separate sheet of paper.

64) Describe how you can tell if a fraction has been reduced to lowest terms.

65) What is the process used to reduce a fraction? MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

 $\begin{array}{c} 37\\ 66) \text{ Write } \overline{14} \text{ as a mixed number.} \quad 66) \end{array}$

A)
$$2\frac{9}{14}$$

B) $2\frac{1}{7}$
C) $1\frac{23}{14}$
D) $9\frac{1}{14}$
E) none of the above

67) Which of $\frac{5}{12}$, 2, $\frac{2}{43}$, $\frac{11}{4}$ is an improper fraction? 67) B) 11/4 C) 12 <u>2</u> D) 43 A) 2 90 68) Write $\overline{35}$ as a mixed number. 68) A) $2\frac{4}{7}$ B) $3\frac{7}{7}$ C) $4\frac{7}{7}$ D) 77 E) none of the above 69 69) Convert $\frac{1}{16}$ to a mixed or whole number. 69) A) 416 5 B) 48 C) 4 16 D) 16 70) Write $\frac{42}{5}$ as a whole or mixed number. A) 75 B) 7570) 7 C) 85 2 D) 85 71) Write $\frac{13}{7}$ as a whole or mixed number. 71)

6	B) 17	C)	D)	
A) 1 13		27	7	
,	can be written as . of a fraction is 36 and	the numerator is 15	Which of the	72)
	escribes the fraction?		. Which of the	15
A) The fraction	n is best described as a	an improper fractio	n.	3
B) The item re	presented by the frac	tion is divided into	36 equal parts.	$\frac{\overline{3}}{31}$
C) When writt	ten as a fraction the fr	action is in lowest t	erms.	35
73) Write as a whol	e or mixed $\frac{36}{15}$	number in lowes	t terms. 73)	
A)	5 B) 4C) 1	2 D)		
$\frac{54}{12}$ 74) $\frac{1}{2}$	Write as a whole or $\frac{1}{2}$ A) 4B) 5C) 42		owest terms. 74)	
$\frac{35}{10}$ 75) $\frac{1}{2}$ A)	Write as a whole or 3B) 25 C) 3D) 3	5	owest terms. 75) $\frac{1}{2}$	
2 3 76)	Change 5 to an impr	-		
$\frac{10}{3}$	$\frac{2}{3}$ A)	$B(C)D) \frac{15}{3}$	$\frac{17}{3}$	
<u>7</u> 8 77)	Convert 3 to an imp	roper fraction.	77)	
$\frac{21}{8}$	(31) (8) (8)	$B(C) \qquad \frac{29}{8}$	24 8)	

D) C) 78) Change $2\overline{6}$ to an improper fraction. 78) $\frac{17}{6}$ B) $\frac{13}{8}$ $\frac{12}{6}$ $\frac{11}{6}$ A) 79) Change $28\frac{1}{3}$ to an improper fraction. 79) (A) $\frac{31}{3}$ (B) $\frac{85}{3}$ (C) $\frac{32}{3}$ (D) $\frac{85}{28}$ 80) Change $14\frac{3}{4}$ to an improper fraction. 80) $\frac{49}{4} \xrightarrow{59}_{B} \xrightarrow{59}_{4} \xrightarrow{21}_{C} \xrightarrow{46}_{D}$ 81) Change $7^{\frac{1}{3}}$ to an improper fraction. 81) $3^{\frac{1}{7}} \xrightarrow{3}{22} \xrightarrow{11}{2} \xrightarrow{22}{3}$ A) 82) Change 0.6 to its fraction or mixed-number equivalent and reduce to lowest terms. 82) B) 60 B) 100 A) 4/5 $\frac{6}{10}$ D) 3 83) Change 2.5 to its fractional equivalent and reduce to lowest terms. 83) $\frac{1}{D}$ C) $2\frac{1}{2}$ A) 100 B) 2 100 84) The length of a screw is 2.625 in. Represent this length as a mixed number. 84) A) $2\frac{3}{8}$ in. B) $2\frac{7}{8}$ in. <u>5</u> C) 28 in. <u>5</u> D) 8 in. 85) Change $\overline{10}$ to a decimal. 85) B) 0.09 C) 0.9 D) 90 A) 9 86) Change $\overline{9}$ to a repeating decimal. 86)

7		C)		D) _	
A) 0.7779B) 0.72	7777777 0.777777	78 0.7			
87) Change 0.024 to i	ts fraction equiva	lent and red	luce to lowest	terms.	87)
A) 24	B) $\frac{6}{25}$		24	D) 3 125	
A) 100	B) 25	C) 1000	D) 125	
88) The length of a so	crew is 4.275 in. R	epresent thi	s length as a 1	nixed number.	88)
A) 3 4	B) 3 8	C	$4\frac{11}{40}$	D) 3 8	
89) Which fraction re	epresents a measu	re of 0.3475	ft.?		89)
A) 3/16	B) 3475 100	C	139 400	D) 27	
<u>7</u> 90) Change 1 8 to a d	lecimal. 90)				
A) 0.1875	B) 9.75	C)	1.875	D) 0.975	
91) Write $\frac{7}{12}$ as a dec	cimal to the hund	redths place	e with remain	der expressed as a	91)
fraction.					
A) .58 100	в) .58 <mark>3</mark>	C)	$1.583\overline{3}$	D) .58 25	
92) A plan needs a gap of $\frac{5}{8}$ in. What should the gap be in decimal notation?92)					
A) 0.63 in.	в) 0.625 in.	C)	1.6 in.	D) 0.125 in.	
93) Which fraction is smallest? 93					93)
A) 5 12	B) $\frac{3}{4}$	$\frac{2}{3}$	D) 1/2	E) 6 7	

94) A quality control inspector used calipers to measure the diameters of four rods and found them to be 0.256 mm, 0.264 mm, 0.253 mm, and 0.249 mm. Which measure is largest?

A) 0.253 mm B) 0.264 mm C) 0.256 mm D) 0.249 mm 95) Which is the common denominator for $\frac{3}{7}$ and $\frac{5}{8}$? A) 8 B) 15 C) 56 D) 7 SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

96) Arrange these fractions in order beginning with the smallest: $\frac{3}{4}$, $\frac{3}{8}$, $\frac{5}{12}$, $\frac{6}{7}$ 96)

97) If hot dogs come in packages of ten and buns come in packages of eight,
 97) what is the minimum number of packages of hot dogs and buns that need to be purchased so that there is an equal number of hot dogs and buns?
 MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

99) Which is the common denominator for $\frac{3}{5}$ and $\frac{7}{15}$ 98) A) 5 B) 20 C) 15 D) 10 100) Arrange $\frac{4}{9}$, $\frac{1}{3}$, $\frac{5}{11}$ in order, beginning with the smallest. 99) ---A) $\frac{1}{3}$, $\frac{5}{11}$, $\frac{4}{9}$ B) $\frac{1}{3}$, $\frac{4}{9}$, $\frac{5}{11}$ C) $\frac{5}{11}$, $\frac{4}{9}$, $\frac{1}{3}$ D) $\frac{4}{9}$, $\frac{1}{3}$, $\frac{5}{11}$ 101) Which fraction is larger, $\frac{7}{8}$ or $\frac{7}{9}$? 100) A) $\frac{7}{9}$ B) $\frac{7}{8}$

	C)	D)	
A) $\frac{3}{5}$ B) $\frac{5}{6}$	102) Which fra	action is larger, $\frac{3}{5}$ or $\frac{5}{6}$?	101)
103) Which of the follow A) 0.87 B) $\frac{27}{32}$ C) $\frac{7}{8}$ D) $\frac{4}{5}$		as the greatest value?	102)
		nator for $\frac{1}{2}$, $\frac{5}{18}$, and $\frac{7}{8}$?	103)
A) 100 B) 2 C) 72 D) 36		, ,	, - ,

105) Which is the common denominator for $\frac{7}{8}$, $\frac{5}{12}$, and $\frac{5}{6}$? 104)

A) 36 B) 12 C) 16 D) 24	
105) Which pair of fractions has the common denominator 48? A) $\frac{3}{14}$ and $\frac{5}{12}$ B) $\frac{7}{36}$ and $\frac{5}{6}$ C) $\frac{5}{8}$ and $\frac{1}{5}$ D) $\frac{1}{6}$ and $\frac{7}{16}$	105)
11 15	
106) A wrench is marked $\frac{11}{16}$ at one end and $\frac{15}{32}$ at the other end. Which end is large	er? 106)
15 11	
$\begin{array}{c} 15\\ A) \overline{32} \\ \end{array} \\ B) \overline{16} \\ \end{array}$	
107) Which decimal is larger, 4.35 or 4.336?	107)
A) 4.35 B) 4.336	
108) A nurse measures and records temperatures of 96.9, 98.5, 95.7, and 97.9. Which temperature is highest?	h ¹⁰⁸)
A) 98.5 B) 95.7 C) 97.9 D) 96.9	
ESSAY. Write your answer in the space provided or on a separate sheet of paper.	

109) Which board is longer? One that is seventy- two and four fifths inches or one that is seventy- two and seven eighths inches? Explain how you know.

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

1 - +4	110)
110) Add: 3	
$ \begin{array}{cccc} 2 & 5 \\ \hline A) 4 \overline{10} \\ 5 \\ B) 3 \overline{8} \end{array} $	
C) $3\frac{1}{2}$	

	3					
	D) 4 10					
	E) none of the	above				
	_	1		-	l each $\frac{3}{4}$ in. thick if a 1	$(1) \frac{3}{16}$
	in. lock washer	is used and a $\overline{8}$ i	in. nut is us	ed?		
	A) 1 16 in.	<u>11</u> В) 1 <u>16</u> in.	C) 1 16 in.	D) 16 in.		
112)					vallboard is $\frac{5}{8}$ in. thick	12)
	and the outside		in thick W	That is the total	l thickness of the wall?	
					i the wait:	
	A) $9\frac{5}{16}$ in	<u>1</u> в) 9 <u>16</u> in.	$() 8\frac{15}{16}$ in	D) $8\frac{1}{16}$ in		
	<i>n</i>) > 10 m.	<i>b)</i> 7 10 m.	c) o 10 m.	<i>D</i>) 0 10 III.		
	113) Perform the ind	icated operation	, leaving the	e answer in lov	1 2 west terms: $- + - =$ 7 3	113)
	3	17		12	2	
	A) $\frac{3}{10}$	B) 17 B) 21		C) 21	D) 21	
	5 — + 114) Add:	7				114)
	9 30					
	17					
	A) 45					
	B) 12 B) 39					
	C) 71 90					
	C) 90					
	23					
	D) 23 D) 45					
	E) none of the	above				

3 115) Perform the indicated operation, leaving the answer in lowest terms: 2 + 1 ____=

7	11	10	4	5 115)
A) $2\frac{7}{24}$	<u>11</u> в) 1 20	C) 3 20	D) 3 10	
11 9				
116) Add: 2 +				116)
14 35				
A) 1 10				
20				
B) 49				
3				
C) 3 70				
D) $\frac{2}{7}$				
D) 7				

1

E) none of the above

117) 7 5 117) Add - + - and reduce answers to lowest terms with improper fractions changed 8 8 to whole or mixed numbers. A) 3/8 C) 1 4 D) <u>3</u> в) 1<u>2</u>

7 118) 118) Add $\overline{}$ + $\overline{}$ and reduce answers to lowest terms with improper fractions 16 4

changed to whole or mixed numbers.

C) 5 8 $A)\frac{1}{2}$ D) 1 16 B) 14 119) 7 1 119) Add 2 ___+ 1 and reduce answers to lowest terms with improper fractions 4 8 changed to whole or mixed numbers. $\frac{2}{C_{0}33}$ D) $\frac{1}{38}$ B) 48 A) 58 120) Joe added the following quarts of oil: $1\frac{1}{2}$ qt. $2\frac{1}{4}$ qt. and $3\frac{1}{2}$ qt. How much oil 120) did Ioe add? D) 74 qt. A) $7\frac{1}{2}$ qt. B) $7\frac{1}{4}$ qt. C) 7 qt. 5 + 63 and reduce answers to lowest terms with improper fractions 121) 121) Add 6 5 8 changed to whole or mixed numbers. A) 12 13 B) 12 40 C) 13 40 D) 13 13 123) A plumber uses a $\frac{3}{4}$ inch diameter copper tube wrapped with $\frac{11}{32}$ inch insulation. 122) What size hole must be bored for the insulated pipe to pass through? 3 A) 1 32 B) 116 C) 116 D) 1 32 E) none of the above

-5 + 11 = 123)

124) Perform the indicated operation, leaving the answer in lowest terms:

125)

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

126) A plumber uses a $\frac{3}{8}$ inch pipe with $\frac{9}{32}$ inch insulation. What size hole 125) _____must be bored for the insulated pipe to pass through?

$$3 + 5 = 8 = 4 -$$
 126)
127) Find the mistake in the following problem:
$$4 \quad 6 \quad 10 \quad 5$$

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

11 7 127) Add - + - and reduce answers to lowest terms with improper fractions 127)

12 8

changed to whole or mixed numbers.

A) $1 \frac{9}{10}$ B) $\frac{9}{10}$ C) $\frac{19}{24}$ D) $1 \frac{19}{24}$

128) Add 10 + 45 and reduce answers to lowest terms with improper fractions 128) changed to whole or mixed numbers.

5 129) A blueprint calls for a piece of bar stock $7\overline{8}$ in. long. If a tolerance of $\pm \overline{16}$ in. is 129) allowed, what is the longest permissible measurement for the bar stock? q 3 11

A)
$$7\overline{16}$$
 B) $7\overline{4}$ C) $7\overline{8}$ D) $7\overline{16}$

ESSAY. Write your answer in the space provided or on a separate sheet of paper.

130) Why is a least common denominator so important in adding fractions?

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

131) Subtract: 5 - 7131) 12 30 A) 30 B) 60 C) 11 C) 30 D) 60

E) none of the above

5 132) Ted has a wall anchor that measures $1\overline{16}$ inches. The screw he wishes to use is 132) $1\overline{4}$ inches. By how much is the anchor longer or shorter than the screw? B) 16 in. C) $\frac{1}{8}$ in. A) $\frac{1}{4}$ in. D) 1 in. 133) A fence board is 96 inches long. $2\frac{3}{4}$ inches is cut off. The saw blade takes off an 133) additional $\overline{8}$ inches. How long is the finished board? A) $93\frac{1}{4}$ inches B) $93\frac{1}{8}$ inches C) $94\frac{1}{8}$ inches D) $94\frac{1}{4}$ inches 3 7 134) Subtract: 9⁻ - 3⁻⁻⁻ 134) 8 12 A) 5 24 B) 5 24 C) 512 D) 612 E) none of the above 135) Perform the indicated operation, leaving the answer in lowest terms: $6\overline{6} - 2\overline{12} =$ 135) C) 3 4 D) 3 4 A) 44 B) $4\frac{1}{4}$ 2 1 136) Perform the indicated operation, leaving the answer in lowest terms: — - = 136) 7 3 C) 11/21 D) - 4 A) $\frac{1}{4}$ B) 10

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question. 137) Six rods 3 16 inches long were cut from a piece of iron rod 41 inches long. 137) Allow $\frac{1}{8}$ inch waste for each cut. What was the length of the piece left?

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

138) Subtract: 5 - 7 138) 12 18 A) 36B) 136 C) 13/24 D) 7 18

E) none of the above

139) Mary cut $4\frac{3}{4}$ sq. yd. of cloth from $5\frac{1}{2}$ sq. yd. of cloth. How many sq. yd. of cloth 139) remain?

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

140) How long of a bolt is needed to fasten two pieces of metal each $\overline{16}$ inches 140) thick if a $\frac{7}{64}$ inch thick nut is used? The nut must be flush with the bolt after tightening.

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

141) Subtract and reduce when necessary: -35141) 16 16

142) Subtract and red A) $\frac{3}{8}$	uce when necessary:	$ \begin{array}{cccc} \underline{11} & \underline{5} \\ & \underline{-} \\ 16 & 8 \\ & \underline{-} \\ & \underline{1} \\ & C) & 8 \end{array} $	D) 16	142)
143) Subtract and red ⁻ A) 18	uce when necessary: 6 B) $1\frac{1}{8}$	6 <mark>7</mark> 6 8 - 5 C) 1	D) 48	143)
A) 29	uce when necessary: 3 B) $2\frac{1}{9}$	9 9 C) 39	D) $2\frac{2}{0}$	144) _
	s fabricated to be $3\frac{5}{8}$ in smallest and largest the statement of the smallest and largest the statement of the stateme	nch long with a to	-	<u>1</u> 32
	s fabricated to be $8\frac{1}{4}$ in smallest and largest the		lerance of ± 146)	<u>1</u> 32
	6 6		147 tement or answers the que	
148) Perform the indic	cated operation in the	expression $2\frac{3}{4}$ - 1	<u>1</u> 5 =	148)

A) 1 20	B) 2 24	C) 3 10	D) 3 20	
149) Subtract and re	educe when necessary <u>:</u>			
		- ² 9		149)
A) 12	B) 7 9	12 3 $C) \frac{11}{15}$	D) 7 12	
150) Subtract and red	duce when necessary:⁻	7 9		150)
A) $\frac{1}{6}$		8 12 C) $\frac{1}{8}$	D) 12	
151) Subtract and red	duce when necessary: ⁻	7 2 		151)
A) 5/24	B) 1	C) 12	D) 1/24	
152) Subtract and red	duce when necessary: 1			152)
A) 8 16	B) 9 16	32 32 <u>13</u> C) 9 16	D) 916	
153) Subtract and red $\frac{1}{A}$ A) 112 B) 10	duce when necessary: 3 <u>7 1 1</u>) 8 C) 11 16 D) 10 1	<u>7 15</u> 31 8 - 20 16 153) 15 16		

154) A concrete foundation includes $10\overline{3}$ inches fill. If the foundation is to be 32 154) ________ inches thick, how thick must the concrete layer be?

A)
$$21\frac{2}{3}$$
 in. B) $22\frac{2}{3}$ in. C) $22\frac{1}{3}$ in. D) $21\frac{1}{3}$ in.
155) Multiply: $\frac{5}{-} \times \frac{3}{-} \times \frac{3}{-}$
9 10 4
A) $\frac{5}{8}$
B) $\frac{1}{8}$
C) $\frac{3}{4}$
D) $\frac{11}{12}$
155)

E) none of the above

			3	1		
156) Perform the indicated operation, leaving the answer in lowest terms: 2×1 =						
			4	5	156) _	
3	19	7	11			
A) 3 10	B) 3 20	C) 2 24	D) 1 20			

157) If you multiply a proper fraction by a proper fraction, the result is a number that 157) is

A) equal in size to the largest factor.

B) smaller than the larger factor only.

C) larger than either of the factors.

D) smaller than either of the factors.

	10
A)	27
	3
B)	8
	3
C)	10
	1
D)	5

E) none of the above

159) Perform the i	indicated operation, leavi	ng the answer in lo		159)
A) 17/21	B) 14 23	C) 21	3 7 D) 11 21	
160) Perform the initial A) $\frac{1}{3}$	indicated operation, leaving $\frac{10}{B} \times \frac{821}{8}$	-	7 3	160)
161) Perform the A) $\frac{1}{9}$	e indicated operation, leav		owest terms: 3 × ⁴ = 1 12 9	161) -
162) Perform the i A) 2	Indicated operation, leaving $\frac{5}{B}$ B) $5\frac{6}{6}$		west terms: $7 \times \frac{5}{6} = \frac{70}{12}$	162)
2 163) Multiply: 1_ 3	_× 3			163)

A) $3\frac{11}{15}$ B) $4\frac{1}{2}$ C) $3\frac{14}{15}$ D) $5\frac{1}{3}$

E) none of the above

		1 7		
164) Multiply and re	duce answers to lowe	est terms: -×-		
		4 16		164) _
7	7			
A) 4	B) 8	C) 64	D) 16	
		-7 × 15		165)
	1 (1			

165) Multiply and reduce answers to lowest terms:

					8	32
	105	105	105	11		
A)	32	B) 256 C)	4 D)	16		

166) Multiply, reduce answers to lowest terms and convert improper fractions to 166) _____ whole or mixed numbers: $9 \times \frac{4}{35}$ A) $27\frac{4}{5}$ B) $34\frac{1}{5}$ C) $34\frac{36}{45}$ D) $27\frac{36}{5}$

167) Multiply, reduce answers to lowest terms and convert improper fractions to 167) ______ whole or mixed numbers: $5\frac{3}{8} \times 3\frac{5}{6}$

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

168) Standard typing paper is $8\overline{2}$ inches wide by 11 inches long. If the margin 168) all around the edge of the paper is a uniform one inch, what is the area of the paper that can be printed on? (Note: Area = Length × Width) 169) A plumber needs 6 pieces of pipe each 168 inches long. If $\frac{1}{8}$ inch waste is 169) allowed for each cut, what length pipe must the plumber have? 170) A metal bar is cut into six pieces each $3\overline{8}$ inches long. Each cut wastes $\overline{16}$ 170) inch. Determine the length of the original bar. MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question. 171) The staircase in a house has 15 risers, each one $7\overline{8}$ inches high. What is the total 171) rise of the steps? $\frac{3}{A} + \frac{5}{1058} = \frac{5}{1058} = \frac{5}{C} + \frac{3}{1028} = \frac{3}{1028$ 172) Multiple and reduce answers to lowest terms: 172) 8 14 173) A fuel tank that holds 90 liters (L) of fuel is $\frac{2}{3}$ full. How many liters of fuel are in 173) the tank? A) 60 L B) 135 L C) 90 3 L D) none of the above

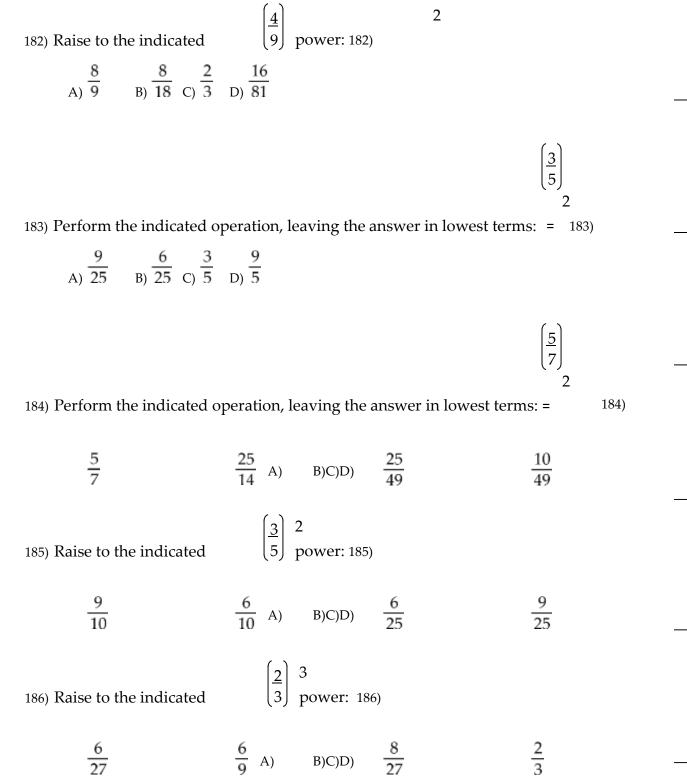
ESSAY. Write your answer in the space provided or on a separate sheet of paper.

- 174) An alloy weighing 42 pounds is $\frac{2}{5}$ copper, $\frac{1}{5}$ silver, and $\frac{2}{5}$ other material. How many pounds of silver are in the alloy? Explain the process you used to find the answer.
- 175) A mixture of dirt, sand, etc. that weighs 350 pounds is 3 parts dirt, 1 part sand, 2 parts top soil, and 2 parts peat. How many pounds of dirt are in the mixture? Explain the process you used to find the answer.
- SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

176) Raise to the indicated	$\begin{bmatrix} 2 \\ 3 \\ 3 \end{bmatrix}$ power: 176)
177) Raise to the indicated	$\left(\begin{array}{c} \underline{3}\\ 8\end{array}\right)^2$ power: 177)
178) Raise to the indicated	$\begin{pmatrix} \underline{1} \\ 4 \end{pmatrix}^3$ power: 178)
179) Raise to the indicated	$\begin{bmatrix} 2\\5 \end{bmatrix}^3$ power: 179)
180) Raise to the indicated	$ \begin{bmatrix} 1 \\ 3 \end{bmatrix} $ power: 180)

181) Raise to the indicated power:
$$\begin{pmatrix} 1 \\ 2 \\ 181 \end{pmatrix}$$

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.



$\begin{pmatrix} \underline{2} \\ 5 \end{pmatrix}$ 187)

3

187) Raise to the indicated power:

$$\frac{6}{125} \qquad \frac{8}{125} \text{ A} \qquad B)C)D) \quad \frac{9}{15} \qquad \frac{6}{15}$$
188) Raise to the indicated power: $\left[1 \right]_{2}^{12}$ 188)
 $\frac{1}{2} \qquad \frac{1}{2}^{2} \qquad \frac{1}{4} \qquad \frac{1}{4}$
A) 1B) 2C) 2 $\frac{1}{4} \qquad \frac{1}{4}$

$$\begin{array}{r}
8 & 10 \\
189) \text{ Divide:} & - \div \\
& 7 & 6 \\
& A) \frac{15}{24} \\
& B) \frac{5}{12} \\
& C) \frac{24}{35} \\
& D) \frac{5}{6}
\end{array}$$

189)

E) none of the above

$-3 \div 21$	190)
190) Divide: 1	
4 8	
A) 15 A) 13	
A) 13	
17	
B) 14	
14	
C) 17	
13	
D) 15	

E) none of the above

2 1 191) Perform the indicated operation, leaving the answer in lowest terms: $2 \div$ = 2 3 191) $\frac{16}{3}$ C) $\frac{3}{4}$ D) 16 A) $\frac{4}{3}$ $\frac{2}{53}$ 192) Perform the indicated operation, leaving the answer in lowest terms: 192) $\frac{1}{19}$ D) <u>5</u> A) 510 $\begin{array}{c} 10 \\ B) 51 \\ \end{array} \qquad \begin{array}{c} 2 \\ C) 527 \\ \end{array}$

193) If you divide a large fraction by another smaller fraction, the result is a number 193) that is:

- A) halfway between the two fractions.
- B) larger than either of the fractions.
- C) smaller than either of the fractions.
- D) equal to only one of the fractions.

2

194) You have a board that is 42 inches wide and would like to position 6 smaller 194) boards each 5 inches wide across the big board so that there is no "margin" on either side, but they are equally spaced across the board. How much space should be allowed between each of the small boards?

B) 2 inches	C) 3 inches	D) 7 inches	
rocal of 4.3?			195)
34	10	3	
B) 10	C) 43	D) 4	
	rocal of 4.3? 34	rocal of 4.3? $\underline{34}$ 10	rocal of 4.3? $\underline{34}$ $\underline{10}$ $\underline{3}$

196) Perform the indicated operation, leaving the answer in lowest terms: $2 \div 1 = 196$) 3 7

$$\begin{array}{c} \frac{2}{43} \\ B) \\ \frac{11}{21} \\ C) \\ \frac{17}{21} \\ D) \\ \frac{2}{21} \end{array}$$

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

$$49 - 3^{1}$$

$$197) Perform the indicated operations and reduce:
$$\begin{array}{r} 49 - 3^{1} \\ \hline 16 \\ \hline 197) \\ 21 + 1 \overline{3} \\ 4 \\ 16 \end{array}$$$$

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

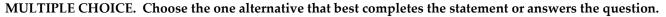
198) Divide: 2_7 ÷
$$3^2$$
 198)
10 5
A) $\frac{15}{17}$
B)
 $\frac{13}{15}$
C) $\frac{37}{50}$

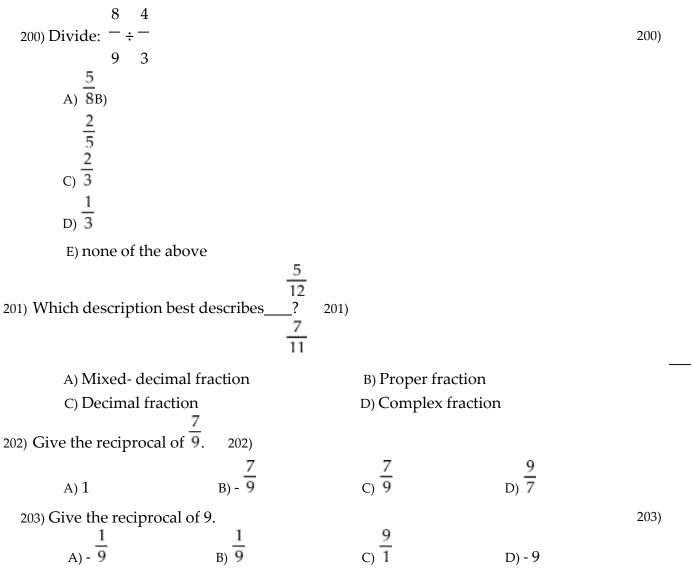
E) none of the above

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

199) Perform the indicated operations and reduce:

= 199) 41 - 21 4 2





204) Divide and reduce answers to lowest terms, converting improper fractions to whole ²⁰⁴) or mixed numbers:

7 21

9	4	20	5
A) 2 20	B) 15	C) 49	D) 9

205) Divide and reduce answer to lowest terms converting improper fractions to whole ²⁰⁵) or mixed numbers:

$6 \div 3\overline{3}$			
A) $\frac{1}{20}$	в) 20	C) 15	D) <u>5</u>

206) Divide and reduce answer to lowest terms. Convert improper fractions to whole or ²⁰⁶) mixed numbers:

$6 \div \frac{2}{3}$			
		1	1
A) 4	B) 9	C) 9	D) $\frac{1}{4}$

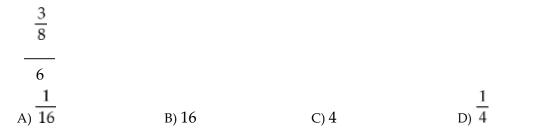
207) Divide and reduce answer to lowest terms. Convert improper fractions to whole or ²⁰⁷) mixed numbers:

$4 \div \frac{5}{6}$			
<u>1</u> A) 3 3	B) 4 5	C) 5/24	D) 5

208) Divide and reduce answer to lowest terms. Convert improper fraction to whole 208) or

mixed number:			
3			
8			
5			
7			
10	2	9	21
10			$\frac{21}{40}$
A) 49	B) 5	C) 4 10	D) 40

209) Divide and reduce answer to lowest terms. Convert improper fractions to whole 209) or mixed number:



SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

210) Five boards $3\frac{3}{4}$ inches long are cut from a piece of board that is 41 inches 210) ______long. Allow $\frac{1}{8}$ inch waste for each cut. What was the length of the piece left?

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

- 211) Each shelf in a floor- to- ceiling bookshelf needs a strip of molding $32\overline{16}$ inches 211) cut from a length of molding measuring $225\overline{16}$ inches long. If the length of the shelf includes the saw cut, how many shelves are in this bookshelf? A) 9 B) 6 C) 7 D) 8
- 212) An I- beam measures 14 ft long. How many whole 216 ft pieces can be cut from 212) this length?

1

215) Give the reciprocal of $5\frac{3}{4}$. 215) A) $\frac{23}{4}$ B) $\frac{23}{-4}$ C) $\frac{-4}{23}$ D) $\frac{4}{23}$ 216) Divide and reduce answer to lowest terms, converting improper fractions to 216) 1_whole 1 or mixed numbers: ÷ 2 6 B) 1/3 A) 12 C) 12 D) 3 3 217) Three- fourths of a mile is divided into $\frac{1}{8}$ mile segments. How many sections are 217) in the $\frac{3}{4}$ mile? A) 2 Segments B) 6 segments C) 39 segments D) $\overline{2}$ segment 218) How many $2\frac{1}{4}$ foot lengths can be cut from a board 18 feet long? 218) D) 18 C) 1 9 A) 9 B) 8

219) How many piec 219)	es of fabric that are ea	$\frac{2}{3}$ yards can be	cut from a bolt that I	has
10 yards of fabric				
A) 4 pieces	<u>2</u> B) 163 pieces	C) 6 pieces	D) 5 pieces	
220) A stack of books 220)	s measures $22\frac{1}{2}$ inches	s high and each bool	$\frac{5}{8}$ inch thick. Ho	 W
many books are ir A) 36 books	n the stack? B) 14 books	C) 13 books	– D) 22 books	
221) Use a calculator to		swers to lowest term $\frac{1}{122}$	-	221)
A) $\frac{1}{8}$	B) 3/25	100 <u>3</u> C) 40	$D) \frac{1}{2}$	
222) Use a calculator to 3 1 3 + 1 4 2 $\overline{}$ 5 - $\frac{4}{5}$	perform the calculation	ons:		222)
5 - 5 <u>1</u> A) 184 <u>4</u> C) 35		$\frac{1}{B} = 14$ D) none of the a	above	
223) Use a calculator to	perform the calculation		above	223)

7 - 1 3 6 $\frac{3}{A}$ $\frac{129}{5}$ B) $\frac{129}{140}$ C) $\frac{87}{184}$ D) $\frac{129}{148}$ ()	
<u>3</u> <u>129</u> <u>87</u> <u>129</u>	
A) 5 B) 140 C) 184 D) 148	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	

5

3

226)

224) Perform the indicated operation, leaving the answer in lowest terms:

- A) $\frac{44}{225}$ B) $\frac{2}{5}$ C) $\frac{2}{15}$ D) $\frac{16}{45}$
- ¹/₂₂₅) Three books measuring $1\frac{1}{2}$, $\frac{11}{15}$, and $\frac{5}{6}$ are placed into one stack and shrink ²²⁵) wrapped. Use a calculator to find the total thickness of the packaged stack. A) $1\frac{17}{23}$ B) $2\frac{1}{15}$ C) $3\frac{1}{150}$ $1\frac{30}{30}$

 $\begin{array}{cccc}
3 & 1 & 7 \\
226) \text{ Use a calculator to add 6 } \underline{} + 2 + \underline{} \\
4 & 3 & 12 \end{array}$. Write answer in lowest terms with

improper fractions changed to whole or mixed numbers.

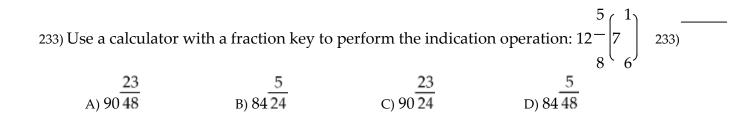
11	2	2	11
A) 8 19	B) 93	C) 99	D) 8 12

227) Use a calculator to multiply and reduce answers to lowest terms: $-\frac{9}{(-)} \left(\frac{7}{-}\right) \left(\frac{2}{-}\right)$

			12 16 9
	7	7	126
A) 126	B) 96	C) 48	D) 1,728

228) Use a calculator to multiply and reduce answers to lowest terms: $\begin{pmatrix} 3 \\ - \end{pmatrix} \begin{pmatrix} 8 \\ - \end{pmatrix} \begin{pmatrix} 8 \\ - \end{pmatrix} \begin{pmatrix} 8 \\ - \end{pmatrix} \begin{pmatrix} 5 \\ - \end{pmatrix} \begin{pmatrix} 16 \\ - \end{pmatrix} \begin{pmatrix} 21 \end{pmatrix} \begin{pmatrix} 16 \\ - \end{pmatrix} \begin{pmatrix} 1$

$$\frac{1}{A} \frac{1}{84} \frac{1}{B} \frac{1}{B} \frac{1}{57} \frac{216}{C} \frac{216}{1,680} \frac{9}{D} \frac{9}{70}$$
229) Use a calculator to multiply, reduce answer to lowest terms and convert 229)
fractions to whole or mixed numbers: 7
$$\frac{2}{5} \frac{5}{B} \frac{1}{B} \frac{1}{D} \frac{2}{C} \frac{3}{12} \frac{1}{D} \frac{41}{D} \frac{41}{D}$$



1) A 2) C 3) B 4) D 5) D 6) D 7) B 8) D 9) C 10) B 11) B 12) D 13) A 14) C 15) C 16) B 17) C 18) C 19) B 20) C 21) C 22) C 23) B 24) B 25) A 26) A 27) C 28) B 29) B 30) B 31) D 32) B 33) C 34) C 35) A 36) A 37) C 38) B 39) D 40) B 41) A 42) C 43) A 44) D 45) E 46) D 47) 2 in. $\frac{1}{48}, \frac{1}{14} \text{ in. } 49, 3\frac{5}{16} \text{ in.}$ 1 50) 2 in.

51) 1 16 in. 52) $3\frac{3}{4}$ in. 7 53) 1 16 in. 54) B 55) D 56) B 57) B 58) D 59) C 60) A 61) B 62) B 63) C 64) Answers will vary. 65) Answers will vary. 66) A 67) B 68) A 69) A 70) D 71) B 72) B 73) A 74) A 75) A 76) D 77) B 78) A 79) B 80) B 81) D 82) D 83) C 84) C 85) C 86) D 87) D 88) C 89) C 90) C 91) B 92) B 93) A 94) B 95) C

96) $\frac{3}{8}, \frac{5}{12}, \frac{3}{4}, \frac{6}{7}$ 97) 4 pkgs hotdogs, 5 pkgs buns 98) C 99) B 100) B 101) B 102) C 103) C 104) D 105) D 106) B 107) A 108) A 109) Answers will vary. 110) D 111) A 112) B 113) B 114) C 115) C 116) C 117) B 118) D 119) B 120) B 121) C 122) C 123) B 124) C 15 125) 16 in. 126) To add, you need a common denominator. 3 + 5 = -9 + 10 = 19 or $1 \frac{7}{12}$ 4 6 12 12 12 127) D

128) D

129) D

130) Answers will vary.

131) D 132) B 133) B 134) B 135) D 136) C 7 137) 218 138) B 139) A 31 140) 164 141) C 142) D 143) A 144) A 145) Smallest: $3\overline{32}$, Largest: $3\overline{32}$ 146) Smallest: 832, Largest: 832 147) Borrowing is required. $21 - 1^2 = 2^3 - 1^4 = 1^9 - 1^4 = _5$ 3 6 6 6 6 6 2 148) A 149) A 150) C 151) A 152) A 153) D 154) A 155) B 156) A 157) D 158) D 159) C 160) D 161) C 162) B 163) D 164) C 165) B 166) B 167) D 1 168) 582 in2 3 169) 100⁸ in.

> 4 6

9 170) 20 16 in. 171) D 172) A 173) A 174) Answers will vary. 175) Answers will vary. 4 176) 9 g 177) 64 178) 64 8 179) 125 7 180) 19 21 181) 425 182) D 183) A 184) C 185) D 186) C 187) B 188) C 189) C 190) C 191) B 192) A 193) B 194) A 195) C 196) A 23 197) 55 198) C 199) 1 200) C 201) D 202) D 203) B 204) B 205) C 206) B 207) B 208) D 209) A 5 210) 218 in. left

211) C 212) B 213) D 214) D 215) D 216) B 217) A 218) B 219) C 220) A 221) A 222) B 223) B 224) D 225) C 226) B 227) B 228) D 229) B 230) B 231) A 232) C 233) A