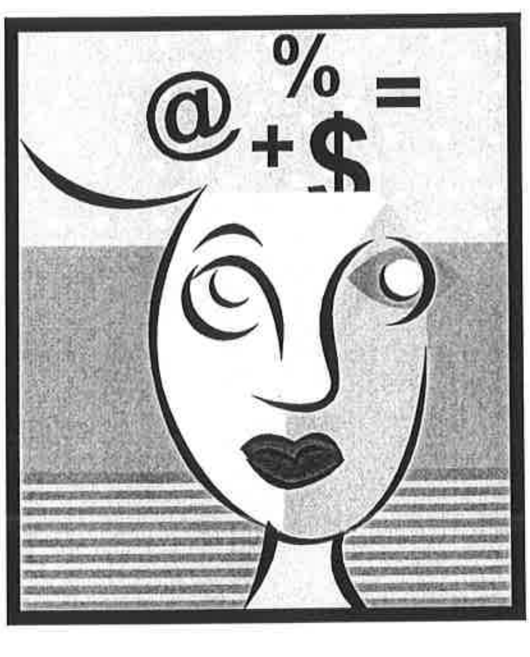
Saxon 7/6

Summer Math Review Packet



Dear Parents,

The Classical Math Committee would like to take this opportunity to give some reminders about and suggestions for using this math packet.

- This math packet is meant as a review of the previous year's concepts. No new material is presented here, so the problems should not require a lot of effort.

- Since this packet is meant as a review, parents and/or students may not use the packet as an indicator for math level advancement—again the problems should not require a lot of effort.

- Since the packet is a review and preparation for the next math level, students should wait until the end of July or early August to work on it. That way they will reap the benefits of having a review right before starting new curriculum in fall.

- Students should complete the math packet material over the course of several weeks. There is no benefit to rushing through the whole packet in just a few days.

- Finally, parents whose student struggles with this packet should let the administrator or the teacher who will have the student in fall know of the student's struggles.

Thank you,

Classical Math Committee

You may want to have your child visit the following sites for additional practice.

http://www.mathfactcafe.com/ For elementary math fact practice.

https://www.math-drills.com Worksheets for all levels and on-line practice.

Section One

Fact Tests

FACTS PRACTICE TEST

B

100 Addition Facts

Name ______________________

Time ______________________

Add.

3 + 2	8 + 3	2 + 1	5 + 6	2 + 9	4 + 8	8 + 0	3 + 9	1 + 0	6 + 3
7 + 3	1 + 6	4 + 7	0 + 3	6 + 4	5 + 5	3 + 1	7 + 2	8 + 5	2 + 5
4 + 0	5 + 7	1 + 1	5 + 4	2 + 8	7 + 1	4 + 6	0 + 2	6 + 5	4 + 9
8 + 6	0 + 4	5 + 8	7 + 4	1 + 7	6 + 6	4 + 1	8 + 2	2 + 4	6 + 0
9 + 1	8 + 8	2 + 2	4 + 5	6 + 2	0 + 0	5 + 9	3 + 3	8 + 1	2 + 7
4 + 4	7 + 5	0 + 1	8 + 7	3 + 4	7 + 9	1 + 2	6 + 7	0 + 8	9 + 2
0 + 9	8 + 9	7 + 6	1 + 3	6 + 8	2 + 0	8 + 4	3 + 5	9 + 8	5 + 0
9 + 3	2 + 6	3 + 0	6 + 1	3 + 6	5 + 2	0 + 5	6 + 9	1 + 8	9 + 6
4 + 3	9 + 9	0 + 7	9 + 4	7 + 7	1 + 4	3 + 7	7 + 0	2 + 3	5 + 1
9 + 5	1 + 5	9 + 0	3 + 8	1 + 9	5 + 3	4 + 2	9 + 7	0 + 6	7 + 8

FACTS PRACTICE TEST

C

100 Subtraction Facts

Name ____________________

Time ____________________

Subtract.

$16 - 9$	$7 - 1$	$18 - 9$	$11 - 3$	$13 - 7$	$8 - 2$	$11 - 5$	$5 - 0$	$17 - 9$	$6 - 1$
$10 - 9$	$6 - 2$	$13 - 9$	$4 - 0$	$10 - 5$	$5 - 1$	$10 - 3$	$12 - 6$	$10 - 1$	$6 - 4$
$7 - 2$	$14 - 7$	$8 - 1$	$11 - 6$	$3 - 3$	$16 - 7$	$5 - 2$	$12 - 4$	$3 - 0$	$11 - 7$
$17 - 8$	$6 - 0$	$10 - 6$	$4 - 1$	$9 - 5$	$9 - 0$	$5 - 4$	$12 - 5$	$4 - 2$	$9 - 3$
$12 - 3$	$16 - 8$	$9 - 1$	$15 - 6$	$11 - 4$	$13 - 5$	$1 - 0$	$8 - 5$	$9 - 6$	$11 - 2$
$7 - 0$	$10 - 8$	$6 - 3$	$14 - 5$	$3 - 1$	$8 - 6$	$4 - 4$	$11 - 8$	$3 - 2$	$15 - 9$
$13 - 8$	$7 - 4$	$10 - 7$	$0 - 0$	$12 - 8$	$5 - 5$	$4 - 3$	$8 - 7$	$7 - 3$	$7 - 6$
$5 - 3$	$7 - 5$	$2 - 1$	$6 - 6$	$8 - 4$	$2 - 2$	$13 - 6$	$15 - 8$	$2 - 0$	$13 - 9$
$1 - 1$	$11 - 9$	$10 - 4$	$9 - 2$	$14 - 6$	$8 - 0$	$9 - 4$	$10 - 2$	$6 - 5$	$8 - 3$
$7 - 7$	$14 - 8$	$12 - 9$	$9 - 8$	$12 - 7$	$9 - 9$	$15 - 7$	$8 - 8$	$14 - 9$	$9 - 7$

FACTS PRACTICE TEST

E

100 Multiplication Facts

Name ____________________

Time ____________________

Multiply.

9×9	3×5	8×5	2×6	4×7	0×3	7×2	1×5	7×8	4×0
3×4	5×9	0×2	7×3	4×1	2×7	6×3	5×4	1×0	9×2
1×1	9×0	2×8	6×4	0×7	8×1	3×3	4×8	9×3	2×0
4×9	7×0	1×2	8×4	6×5	2×9	9×4	0×1	7×4	5×8
0×8	4×2	9×8	3×6	5×5	1×6	5×0	6×6	2×1	7×9
9×1	2×2	5×1	4×3	0×0	8×9	3×7	9×7	1×7	6×0
5×6	7×5	3×0	8×8	1×3	8×3	5×2	0×4	9×5	6×7
2×3	8×6	0×5	6×1	3×8	7×6	1×8	9×6	4×4	5×3
7×7	1×4	6×2	4×5	2×4	8×0	3×1	6×8	0×9	8×7
3×2	4×6	1×9	5×7	8×2	0×6	7×1	2×5	6×9	3×9

FACTS PRACTICE TEST

F

90 Division Facts

Name ______________________

Time ______________________

Divide.

$7\overline{)21}$	$2\overline{)10}$	$6\overline{)42}$	$1\overline{)3}$	$4\overline{)24}$	$3\overline{)6}$	$9\overline{)54}$	$6\overline{)18}$	$4\overline{)0}$	$5\overline{)30}$
$4\overline{)32}$	$8\overline{)56}$	$1\overline{)0}$	$6\overline{)12}$	$3\overline{)18}$	$9\overline{)72}$	$5\overline{)15}$	$2\overline{)8}$	$7\overline{)42}$	$6\overline{)36}$
$6\overline{)0}$	$5\overline{)10}$	$9\overline{)9}$	$2\overline{)6}$	$7\overline{)63}$	$4\overline{)16}$	$8\overline{)48}$	$1\overline{)2}$	$5\overline{)35}$	$3\overline{)21}$
$2\overline{)18}$	$6\overline{)6}$	$3\overline{)15}$	$8\overline{)40}$	$2\overline{)0}$	$5\overline{)20}$	$9\overline{)27}$	$1\overline{)8}$	$4\overline{)4}$	$7\overline{)35}$
$4\overline{)20}$	$9\overline{)63}$	$1\overline{)4}$	$7\overline{)14}$	$3\overline{)3}$	$8\overline{)24}$	$5\overline{)0}$	$6\overline{)24}$	$8\overline{)8}$	$2\overline{)16}$
$5\overline{)5}$	$8\overline{)64}$	$3\overline{)0}$	$4\overline{)28}$	$7\overline{)49}$	$2\overline{)4}$	$9\overline{)81}$	$3\overline{)12}$	$6\overline{)30}$	$1\overline{)5}$
$8\overline{)32}$	$1\overline{)1}$	$9\overline{)36}$	$3\overline{)27}$	$2\overline{)14}$	$5\overline{)25}$	$6\overline{)48}$	$8\overline{)0}$	$7\overline{)28}$	$4\overline{)36}$
$2\overline{)12}$	$5\overline{)45}$	$1\overline{)7}$	$4\overline{)8}$	$7\overline{)0}$	$8\overline{)16}$	$3\overline{)24}$	$9\overline{)45}$	$1\overline{)9}$	$6\overline{)54}$
$7\overline{)56}$	$9\overline{)0}$	$8\overline{)72}$	$2\overline{)2}$	$5\overline{)40}$	$3\overline{)9}$	$9\overline{)18}$	$1\overline{)6}$	$4\overline{)12}$	$7\overline{)7}$

H

72 Multiplication and Division Facts

Name ______________________

Time ______________________

Multiply or divide as indicated.

5×9	$6\overline{)36}$	4×7	$8\overline{)40}$	10×3	$5\overline{)20}$	2×7	$9\overline{)27}$
$9\overline{)81}$	5×7	$6\overline{)24}$	2×3	$7\overline{)42}$	7×9	$5\overline{)10}$	4×5
2×9	$7\overline{)28}$	6×9	$4\overline{)8}$	3×3	$8\overline{)24}$	10×4	$6\overline{)12}$
$9\overline{)63}$	2×5	$8\overline{)64}$	7×6	$10\overline{)100}$	3×5	$9\overline{)36}$	10×8
4×8	$5\overline{)25}$	3×8	$4\overline{)16}$	10×5	$7\overline{)14}$	2×2	$8\overline{)48}$
$9\overline{)54}$	3×6	$5\overline{)15}$	2×8	$7\overline{)49}$	4×6	$6\overline{)30}$	5×8
10×6	$4\overline{)12}$	7×8	$6\overline{)18}$	3×4	$7\overline{)35}$	5×6	$8\overline{)32}$
$8\overline{)56}$	2×4	$8\overline{)16}$	6×8	$7\overline{)21}$	8×9	$3\overline{)6}$	3×9
10×7	$9\overline{)18}$	3×7	$9\overline{)45}$	2×6	$9\overline{)72}$	4×9	$9\overline{)90}$

K

Linear Measurement

Name ____________

Time ____________

Write the abbreviation for each of the following units.

Metric Units

1. millimeter ______
2. centimeter ______
3. meter ______
4. kilometer ______

U.S. Customary Units

5. inch ______
6. foot ______
7. yard ______
8. mile ______

Complete each unit conversion.

Metric Conversions

9. 1 centimeter = ______ millimeters
10. 1 meter = ______ millimeters
11. 1 meter = ______ centimeters
12. 1 kilometer = ______ meters

U.S. Customary Conversions

13. 1 foot = ______ inches
14. 1 yard = ______ inches
15. 1 yard = ______ feet
16. 1 mile = ______ feet
17. 1 mile = ______ yards

Conversions between systems

18. 1 inch = ______ centimeters
19. 1 mile ≈ ______ meters
20. 1 meter ≈ ______ inches
21. 1 kilometer ≈ ______ mile

Write an appropriate unit for each physical reference.

Metric Units

22. The thickness of a dime: ______
23. The width of a little finger: ______
24. The length of one BIG step: ______

U.S. Customary Units

25. The width of two fingers: ______
26. The length of a man's shoe: ______
27. The length of one big step: ______

Arrange each set of units in order from shortest to longest.

28. m, cm, mm, km ______, ______, ______, ______
29. ft, mi, in., yd ______, ______, ______, ______

Find each equivalent measure.

30. 10 cm = ______ mm
31. 2 m = ______ cm or ______ mm
32. 5 km = ______ m
33. 2.5 cm = ______ mm
34. 1.5 m = ______ cm or ______ mm
35. 7.5 km = ______ m
36. $\frac{1}{2}$ ft = ______ in.
37. 2 ft = ______ in.
38. 3 ft = ______ in.
39. 2 yd = ______ ft
40. 10 yd = ______ ft
41. 100 yd = ______ ft

FACTS PRACTICE TEST

L — **Liquid Measurement**

Name ______________________

Time ______________________

Write the abbreviation for each of the following units.

Metric Units	U.S. Customary Units	
1. liter ________	**3.** ounce ________	**5.** quart ________
2. milliliter ________	**4.** pint ________	**6.** gallon ________

Complete each unit conversion.

Metric Conversions

7. 1 liter = ________ milliliters

U.S. Customary Conversions

8. 1 cup = ________ ounces

9. 1 pint = ________ ounces

10. 1 quart = ________ pints

11. 1 gallon = ________ quarts

Conversions between systems

12. 1 liter ≈ ________ quarts

13. 1 gallon ≈ ________ liters

Complete each statement.

14. One fourth of a dollar is a quarter, and one fourth of a gallon is a ______________.

15. A two-liter bottle of soda is a little more than 2 ______________ or $\frac{1}{2}$ of a ______________.

16. "A pint's a pound the world around" means a ______________ of water weighs about 1 pound.

17. In the United States, gasoline is sold by the ______________. In other countries, gasoline is sold by the ______________. A gallon of gasoline is more than ________ liters but a little less than ________ liters.

18. 2 cups make a ______________.

19. 2 pints make a ______________.

20. 2 quarts make a ______________.

21. 2 half gallons make a ______________.

22. A gallon of milk will fill ________ cups.

23. If you drink 8 cups of water each day, you drink a ______________ of water.

Find each equivalent measure.

24. 2 liters = ________ milliliters

25. 2 liter ≈ ________ quarts

26. 3.78 liters = ________ milliliters

27. 0.5 liters = ________ milliliters

28. $\frac{1}{2}$ pint (1 cup) = ________ ounces

29. 1 quart (2 pints) = ________ ounces

30. $\frac{1}{2}$ gallon = ________ quarts

31. 1 gallon = ________ pints

32. 2 gallons = ________ quarts

FACTS PRACTICE TEST

N

Measurement Facts

Name ____________________

Time ____________________

1. Draw a segment 1 cm long.
2. Draw a segment 1 in. long.
3. One inch is how many centimeters? ______________
4. Which is longer, 1 km or 1 mi? ______________
5. Which is longer, 1 km or $\frac{1}{2}$ mi? ______________
6. How many ounces are in a pound? ______________
7. How many pounds are in a ton? ______________
8. A dollar bill has a mass of about one ______________.
9. Your math book has a mass of about one ______________.
10. On earth a kilogram mass weighs about ________ pounds.
11. A metric ton is ________ kilograms.
12. On earth a metric ton weighs about ________ pounds.
13. The earth rotates on its axis once in a ______________.
14. The earth revolves around the sun once in a ______________.

Abbreviations:

15. milligram ________	19. ounce ________
16. gram ________	20. pound ________
17. kilogram ________	21. ton ________
18. ________ C	22. ________ F

Equivalents:

23. 1 gram = ________ milligrams
24. 1 kilogram = ________ grams
25. $\frac{1}{2}$ ton = ________ pounds
26. ________ days = a common year
27. ________ days = a leap year
28. ________ weeks ≈ a year
29. ________ years = a decade
30. ________ years = a century
31. ________ years = a millennium

How many days are in

32. Jan. ______	38. July ______
33. Feb. ______ or ______	39. Aug. ______
34. Mar. ______	40. Sept. ______
35. Apr. ______	41. Oct. ______
36. May ______	42. Nov. ______
37. June ______	43. Dec. ______

Write the indicated temperatures.

44. Water boils ____°F

45. ____°C

46. Normal body temperature ____°F

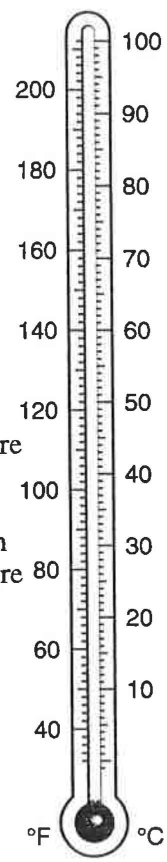
47. ____°C

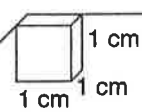
Cool room temperature 68 °F

48. ____°C

49. Water freezes ____°F

50. ____°C





51. A cubic container 1 cm on each edge has a volume of one ______________ ______________ and can hold one ______________ of water, which has a mass of one ______________.

52. A cubic container 10 cm on each edge has a volume of ________ cubic centimeters and can hold one ______________ of water which has a mass of one ______________.

10 cm

10 cm

10 cm

Section Two

Student Worksheets

Skill Review: Story Problem Equations

Problems about Combining:
Addition Pattern
Some + Some More = Total/ S+M=T

1. The band club sold 78 candy bars the first week of the fund-raiser to buy new band uniforms. 884 candy bars were sold the second week. How many candy bars were sold during the first two weeks?

2. Curt had 25 cents. He found 2 nickels. Then his father gave him 5 cents. How much money does Curt have now?

3. There were 96 children signed up for summer camp. A week before summer camp started, 29 more children signed up. How many children were going to the summer camp?

Problems about Separating:
Subtraction Pattern
Beginning amount - Some went away = What remains/ B-A=R

4. At a bus stop, 12 people are waiting for a ride to work. The first bus picks up 7 people. How many people are still at the bus stop?

5. John had $124 in the bank. He took $73 out of the bank. How much money does he have left?

6. At Fredo's Pizza a small pizza costs $5.15. Phil gave the cashier $10.00 for a small pizza. How much change should he receive?

Problems about Comparing:
Subtraction Pattern
Larger- Smaller = Difference/ L-S=D

7. In Bartonville the high temperature was 68° F. On the same day the high temperature in far-away Cloverton was 54° F. What was the difference between the temperatures?

8. The height of a building is 3050 meters. The height of an adjacent building is 930 meters. What is the difference in their heights?

9. One group of rock climbers was at 909 feet. A second group was at 115 feet. What is the difference in height between the two groups?

Problems about Elapsed Time:
Subtraction Problem
Later - Earlier = Difference/ L-E=D

10. Shane's grandfather was born in 1924. If Shane was born in 1997, how much older is his grandfather?

11. How many years were there from 1223 to 1669?

12. In 1938, what year would it have been 31 decades ago?

13. A plane landed in Miami at 6:50 p.m. It departed from New York at 4:15 p.m. How long did it take the plane to fly from New York to Miami?

14. Jeff started his homework at 7:16 p.m. Jeff finished his homework at 9:41 p.m. How much time did Jeff work on his homework?

15. What time is $5\frac{1}{2}$ hours after 11:25 p.m.?

Problems about Equal Groups:
Multiplication Pattern
Number of groups times Number in each group = Total/ N times G=T

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16. Anna eats about 675 calories of food at each meal. How many calories will she eat in 9 meals?

17. Crafters Supply packs 232 beads in each box. Petula ordered 67 boxes of beads. How many beads did Petula order?

18. Amber spent $2.46 at the stationery store. If she bought 6 bookmarks, how much did each bookmark cost?

19. There were 24 rabbits in the forest. If $\frac{3}{4}$ of them were brown, how many rabbits were brown?

20. What number is $\frac{3}{8}$ of 64?

21. How much is $\frac{17}{24}$ of four dozen?

Skill Review: Add/ Subtract/ Multiply/ Divide--Decimals

1. What is the place value of the 3 in 705.83?

2. What digit in 8460.352 is in the thousandths place?

3. What digit is in the tenths place in 392.467?

When adding and subtracting decimals, line up the place value using zero as a place holder when necessary.

Add:

4. $0.3 + 0.2$

5. $4.86 + 0.84 + 0.3$

6. Subtract: $0.93 - 0.14$

Add:

7. $5 + 25.15$

8. $3.79 + 1 + 2.3$

9. Subtract: $29.05 - 19$

When multiplying decimals, do NOT line up place value. Multiply numbers as if they were whole numbers. When finished, move the decimal point as many decimals places to the left of the number, as there are in the problem.

10. Multiply: 0.51×0.03

11. Simplify: $(1.8)^2$

12. Multiply: 13×0.8

13. Subtract: $5 - 1.3$

14. Multiply: 0.001×0.4

15. Use digits to write the decimal number ten and eleven thousandths.

When dividing a decimal by a whole number, move the decimal point up above your division box exactly where it is located inside the box. Divide as usual.

Divide:

16. $8\overline{)2.4}$

17. $5\overline{)0.15}$

18. The distance from Margaret's house to school and back is 2.2 miles. How far does she live from school?

When dividing a decimal number by a decimal number:

1. Move your decimal number in your divisor to create a whole number
2. However many places you move your divisor, you must also move in your dividend.
3. Then divide as you would by a whole number.

Divide:

19. $0.7\overline{)5.04}$

20. $0.28 \div 0.07$

21. $\dfrac{17}{0.5}$

22. $0.7\overline{)4.06}$ [A] 0.51 [B] 5.8 [C] 3 [D] 0.58

Dividing by 10, 100...move decimal point to the left
Multiplying by 10, 100...move decimal point to the right

Divide:

23. $55.1 \div 100$

24. $17.8 \div 10$

25. $2.8 \div 10$

Skill Review: Add/ Subtract/ Multiply/ Divide--Fractions

Adding/ Subtracting Fractions:
1. Change to have Common Denominators
2. Add/ Subtract across
3. Denominator stays the same
4. Simplify/ Reduce

Add:

1. $\frac{1}{4}+\frac{3}{4}$

2. $\frac{1}{7}+\frac{1}{7}+\frac{1}{7}$

3. Subtract: $\frac{4}{7}-\frac{1}{7}$

When adding/ subtracting mixed numbers:
1. Remain mixed numbers
2. Find common denominators
3. Add/ subtract whole numbers
4. Add/ subtract fractions like usual
5. Simplify/ Reduce

Add:

4. $2\frac{1}{3}+2\frac{5}{6}$

5. $4\frac{1}{2}+5\frac{2}{3}$

Add:

6. $2\frac{2}{3}+2\frac{3}{4}$

7. $\frac{1}{6}+\frac{1}{2}+\frac{1}{3}$

8. $\frac{1}{4}+\frac{5}{6}+\frac{5}{12}$

9. $1\frac{1}{5}+1\frac{1}{2}+\frac{5}{4}$

Subtract:

10. $7-\frac{2}{3}$

11. $8-2\frac{2}{3}$

12. There were five whole pies on the shelf. The server took $3\frac{2}{3}$ pies. How many pies were left on the shelf?

Subtracting with regrouping:
1. Common denominators
2. When bottom fraction is greater than top fraction, borrow from top whole number (4 3/5 becomes 3 8/5 because 5/5 + 3/5 = 8/5)
3. Subtract
4. Simplify/ Reduce

Subtract:

13. $3\frac{1}{7}-1\frac{4}{7}$

14. $4\frac{1}{3}-1\frac{2}{3}$

15. $5\frac{1}{6}-3\frac{5}{6}$

16. $3\frac{1}{2}-3\frac{2}{5}$

17. $4\frac{1}{5}-1\frac{1}{3}$

18. $8\frac{1}{2}-4\frac{3}{4}$

Multiplying Fractions:

1. Changed to improper fractions if necessary
2. Multiply numerators
3. Multiply denominators
4. Simplify/ Reduce

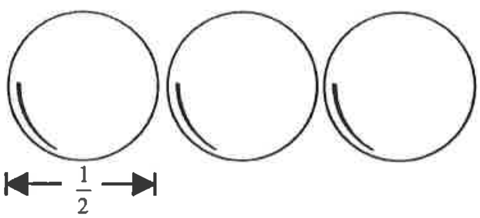
Multiply:

19. $\frac{2}{7} \times \frac{2}{3}$

20. $6 \times \frac{3}{5}$

21. Three balls are placed side by side as shown below. The diameter of one ball is $\frac{1}{2}$ inch.

How long is the row of balls?



Multiply:

22. $\frac{1}{4} \times 8\frac{1}{8}$

23. $3\frac{1}{3} \times 4\frac{5}{8}$

Multiply:

24. $2 \times 4\frac{2}{7}$

Dividing Fractions:

1. Change to improper fractions if necessary
2. Multiply by the reciprocal
3. Example: 1/2 divided by 2/3 = 1/2 times 3/2
4. Simplify/ Reduce

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25. How many quarters are in $9?

26. The diameter of a marble is $\frac{3}{2}$ of an inch. How many marbles are needed to make a row of marbles 12 inches long?

27. How many $\frac{5}{3}$'s are in 15?

Divide:

28. $\frac{30}{7} \div 6\frac{1}{4}$

29. $4\frac{2}{7} \div 3\frac{1}{8}$

30. $4 \div 2\frac{1}{2}$

Fractions/ Decimals/ Percents

To change a percent into a fraction:
1. Place the number over its proper place value
2. Reduce

Example: 4% = 4/100 = 1/25

Write the percentage as a fraction. Reduce when possible:

1. 15%

2. 61%

3. 29%

4. What is $11\frac{1}{4}\%$ as a fraction?

5. What is $2\frac{6}{7}\%$ as a fraction?

6. What is $16\frac{1}{4}\%$ as a fraction?

To change a decimal into a fraction:
1. Place the number over its place value
2. Reduce

Example: .4 = 4/10 = 2/5
Example: .25 = 25/100 = 1/4

7. Write 0.81 as a fraction.

8. Write $\frac{72}{1000}$ as a decimal.

9. Write $\frac{3}{10}$ as a decimal.

10. Write 0.65 as a fraction.

11. Write 9.85 as a mixed number.

12. Write 0.165 as a fraction.

To change a fraction into a decimal:
1. Divide numerator by the denominator

Example: 1/2 = "1 divided by 2" = .5

---

13. Convert $\frac{1}{5}$ to a decimal number.

14. Write $\frac{21}{56}$ as a decimal number.

15. Write $4\frac{3}{8}$ as a decimal number.

To change a fraction and decimal into a percent:
1. Fraction: Create an equivalent fraction with 100 as the denominator
2. Decimal: Multiply by 100

---

16. Of the 80 students who took the test, 60 earned A's. What percent of the students earned A's?

17. Write 0.12 as a percent.

18. Write $\frac{3}{100}$ as a percent.

19. Change $\frac{1}{8}$ to a percent by multiplying by 100%.

20. Change $1\frac{5}{8}$ to a percent by multiplying by 100%.

21. Change 0.627 to a percent by multiplying by 100%.

22. Write the value that correctly completes the table.

Fraction in Lowest Terms	Percent	Decimal
	28%	0.28

23. Complete the table:

Fraction	Decimal	Percent
$\frac{17}{25}$		

24. Write the value that correctly completes the table.

Fraction in Lowest Terms	Percent	Decimal
	62%	0.62

25. Complete the table:

Fraction	Decimal	Percent
$\frac{21}{10}$		

[A]

Fraction	Decimal	Percent
$\frac{21}{10}$	21	210%

[B]

Fraction	Decimal	Percent
$\frac{21}{10}$	2.1	210%

[C]

Fraction	Decimal	Percent
$\frac{21}{10}$	2.1	211%

[D]

Fraction	Decimal	Percent
$\frac{21}{10}$	21	211%

Equations

Missing Addend: Subtract

Find the missing number:

1. $35+17+7+n=77$

2. $N+7=45$

3. $$\begin{array}{r} t \\ +\ 16 \\ \hline 80 \end{array}$$

Missing Minuend (top number): Add
Missing Subtrahend (bottom number): Subtract

Find the missing number:

4. $q-4=3$

5. $N-12=27$

6. $288-v=142$

Missing Factor: Divide

Find the missing number:

7. $12n=180$

8. $15=5c$

9. $9\times v=72$

Missing Dividend (outside the box): Multiply
Missing Divisor (inside the box): Divide

Find the missing number:

10. $\frac{g}{6} = 3$

11. $c \div 8 = 9$

12. $184 \div x = 8$

Two- step equations require more than one operation to complete. The object is to get the letter standing by itself.

1. First add or subract the whole number unattached to the letter to both sides.
2. Divide by the whole number attached to the letter on both sides.
3. Solve.

Solve:

13. $4x + 3 = 27$

14. $2x - 5 = 9$

15. $24x + 7 = 79$

16. $10x + 2 = 102$

17. $10x + 1 = 101$

18. $3x - 4 = 17$

Order of Operations

Order of Operations:
1. Parenthesis
2. Exponents
3. Square Roots
4. Multiplication/ Division in order of appearance
5. Addition/ Subtraction in order of appearance

Solve:

1. $\dfrac{8+10}{2}$

2. $(19-7)+4$

3. $(18\times 6)\div 2$

4. $\dfrac{15+10}{5}$

5. $24-(4+4)$

6. $(12\times 7)\div 4$

Simplify:

7. $3\times 8+9-12\div 4$

8. $8\div 4+6\times 3$

9. $(0.2+0.3)\div(0.5-0.4)$

10. $2\times 5+12-12\div 4$

Simplify:

11. $9 \div 3 + 3 \times 6$

12. $(0.3 + 0.41) - (0.4 \times 0.9)$

13. $6^2 - \sqrt{36}$

14. $\sqrt{4} + 4^3$

15. $6^2 - \sqrt{16} - 1 \times 6$

16. $3^2 - \sqrt{9}$

17. $\sqrt{16} + 2^3$

18. $10^2 - \sqrt{4} - 8 \times 7$

Integers

Addition and Subtraction of Integers:

1. Algebraic Addition: Adding the opposite number to subtract
2. Change a subtraction sign to add by the opposite
3. Example: -3 - 5 = -3 + -5
4. Like signs= straight addition with that sign
5. Unlike signs= subtraction of whole numbers and greater sign is the answer

Simplify:

1. $(-1)-(+7)$

2. $4+(-11)$

3. $(-13)+(-2)$

4. $(-4)-(+5)$

5. $-8+(+14)$

6. $(+18)+(-20)$

Steps:

1. Change Signs (+/+=+; -/-=+; -/+=-; +/-=-)
2. Groups like signs together by algebraic addition
3. Add

Simplify:

7. $-10-(+30)-(-40)+(-20)$

8. $2-(-11)+(+7)-(-5)$

9. $1+(-16)-(+8)+(+5)$

Simplify:

10. $20-(-25)-(-35)+(-30)$

11. $-4-(+12)+(+9)-(-6)$

12. $-9+(+14)-(+3)+(-2)$

Multiplying and Dividing Integers:
1. positive/ positive = positive
2. positive/ negative = negative
3. negative/ negative = positive

*****Same signs = positive/ Opposite signs = negative*****

---

13. Multiply: $(-3)(+6)$

14. Divide: $(+10)\div(+2)$

15. Multiply: $(-9)(+8)$

16. Divide: $(-15)\div(-5)$

17. Multiply: $(+3)(-5)$

18. Divide: $(+18)\div(-3)$

19. Multiply: $(-4)(+7)$

20. Divide: $(-20)\div(+5)$

Ratios/ Proportions

1. What is the cat-dog ratio in a neighborhood that has 3 cats and 8 dogs?

2. What is the ratio of pigs to goats in a barnyard with 13 pigs and 18 goats?

3. Of the 29 students in the class, 13 were boys. What was the ratio of boys to girls?

Ration numbers and actual numbers are related by scale factor. If we multiply the terms of a ration by the correct scale factor, we can find the actual count. If the ratio is 3 boys to 2 girls (3/2) and we have 6 girls in the class, the scale factor would be 3 because 2 times 3 = 6.

---

4. The ratio of little boys to little girls in the nursery was 4 to 3. There were 9 little girls in the nursery.
   (a) Find the scale factor.
   (b) How many little boys were there?

5. The ratio of boys to girls in the cafeteria was 7 to 5. There were 55 girls in the cafeteria.
   (a) Find the scale factor.
   (b) How many boys were there?

6. The ratio of flowers to weeds in the garden was 2 to 5. There were 12 flowers in the garden.
   (a) Find the scale factor.
   (b) How many weeds were there?

Begin wth a ration box. Ratio to Actual Count.
Ratio: Boys to girls 5/4 with a total of 9.
Actual: Boys to girls with a total of 27.
Form a proportion using this information 5 is to 4 as b/g is to 27.
Solve for b/g depending on what the question is.

---

7. Mr. Jones has taken a survey of college students and has found that 80 out of 91 students studied last weekend. If the college has 8375 students, find the number of students who studied last weekend.

8. The ratio of males to females enrolled at a certain university is 7 to 3. If there are 2310 students at the university, how many females are there?

9. The ratio of cards that are number-side up to cards that are number-side down is 1 to 3. If there are 60 cards altogether, how many cards are number-side up?

A proportion is a true statement that two ratios are equal. Two ratios that are not equivalent are not proportional.
Example: 3/4 = 6/8

---

10. How many of the following are proportions?

$\frac{2}{7}=\frac{12}{42}; \frac{2}{7}=\frac{10}{35}; \frac{2}{7}=\frac{16}{56}; \frac{2}{7}=\frac{14}{49}$

11. Which of the following does not form a proportion with $\frac{2}{5}$?

$\frac{8}{20}, \frac{20}{50}, \frac{6}{10}, \frac{6}{15}$

12. Write the given proportion with digits:
Three is to twelve as four is to sixteen.

Solve Proportions:
1. What you do to the numerator, you do to the denominator
2. Cross multiplication: Multiply numerator times cross denominator on both sides. When missing a number create an equation and solve for missing number.

Example: 3/4 = 6/8
3 times 8 = 24
4 times 6 = 24
Example: 3/4 = x/8
(3)(8) = 4x
24 = 4x
x = 6

Use cross products to complete the proportion:

13. $\frac{5}{12}=\frac{5}{x}$

14. $\frac{13}{52}=\frac{y}{20}$

15. 10 is to 30 as 20 is to what number?

Create a ratio box with ratio and actual count/ percent/ or total. Using the question to create a proportion, solve for missing information.

16. The ratio of salamanders to frogs was 5 to 7. If there were 25 salamanders, how many frogs were there?

17. The ratio of humpback whales to killer whales was 2 to 9. If there were 63 killer whales, how many humpbacks were there?

18. There were more dragons than knights in the battle. The ratio of dragons to knights was 5 to 4. If there were 64 knights, how many dragons were there?

19. Millie correctly answered 42 questions on an English test. She received a score of 75%. How many questions were on the test?

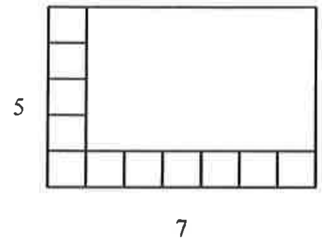
20. A golf group planned a trip to Myrtle Beach, and 64 of the members signed up to go. If this is 40% of the group, how many members does the golf group have in total?

21. Only eighty percent of the team members played in the game. If 3 team members did not play, then how many did play?

Formulas: Area/ Volume/ Circumference

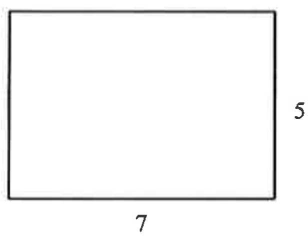
Rectangle/ Square: Area = Length times Width

1. Altogether, how many square feet does it take to cover this rectangle?



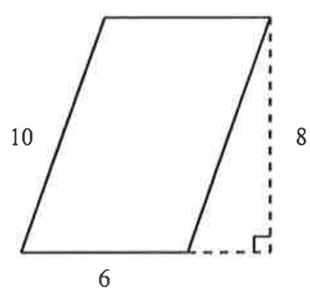
2. One side of a square is 4 inches long.
   (a) Find the perimeter of the square.
   (b) Find the area of the square.

3. Find the area of the rectangle. Dimensions are in centimeters.

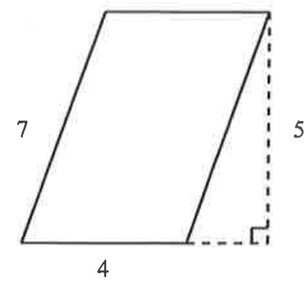


Parallelogram: Area = Base times Height

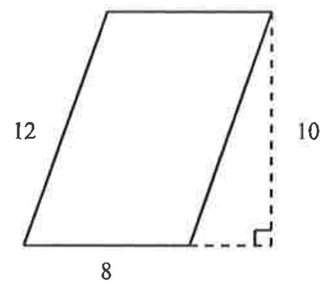
4. Find the area of the parallelogram. Dimensions are in centimeters.



5. Find the area of the parallelogram. Dimensions are in centimeters.

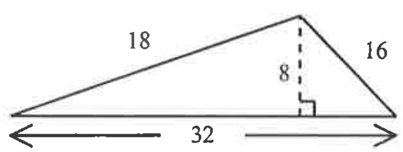


6. Find the area of the parallelogram. Dimensions are in centimeters.

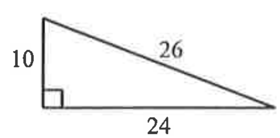


Triangle: Area = Base times Height/ 2

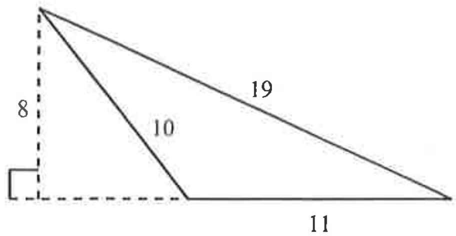
7. Find the area of the triangle. Dimensions are in yards.



8. Find the area of the triangle. Dimensions are in meters.



9. Find the area of the triangle. Dimensions are in feet.



Circle: Area = Pie times Radius squared

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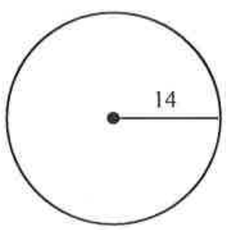
10. For a circle with a diameter of 54 kilometers, find the area rounded to the nearest hundredth. Use 3.14 for π.

11. Find the area of the circle. Use 3.14 for π. Round to the nearest hundredth. Dimensions are in meters.

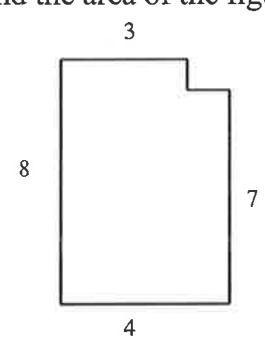


12. Find the area of a circle that has a radius of 10 centimeters. Use 3.14 for π.

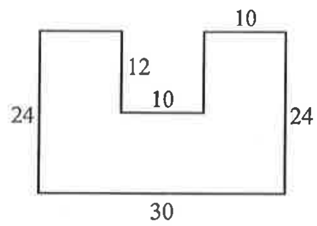
Area of Complex Shapes:
1. Break shape up into squares/ rectangles/ circles/ triangles
2. Find area of each individual shape
3. Add together

---

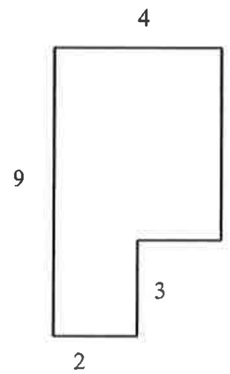
13. Find the area of the figure. All angles are right angles. Dimensions are in feet.



14. Find the area of the figure. All angles are right angles. Dimensions are in meters.

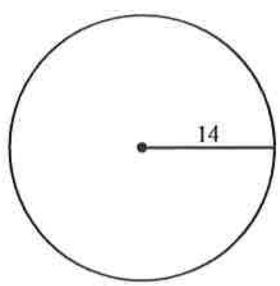


15. Find the area of the figure. All angles are right angles. Dimensions are in feet.

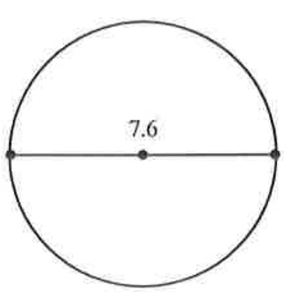


Circumference = Pie times Diameter

16. Find the circumference of the circle. Dimensions are in inches. Use 3.14 for π.



17. Find the circumference of the circle. Dimensions are in centimeters. Use 3.14 for π.

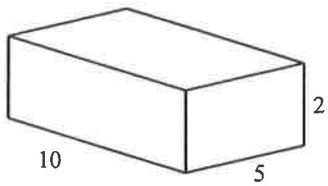


18. The diameter of a circular garden is 10.8 m. Find the circumference. Use 3.14 for π.

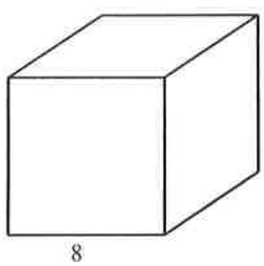
Volume (either can be used depending on shape):
Volume = Area of Base time Height
Volume = Length times Height times Width

---

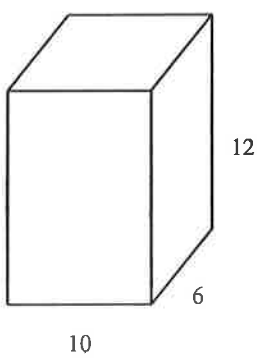
19. How many 1-cm sugar cubes would be needed to build this rectangular prism? Dimensions are in centimeters.



20. Find the volume of the cube. Dimensions are in inches.



21. Find the volume of the rectangular prism. Dimensions are in meters.

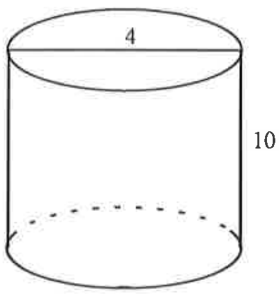


Volume of Cylinder:

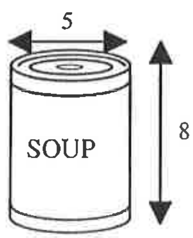
1. Find the area of the circular end (Area = Pie times Radius squared)
2. Multiply the area by the height of the cylinder

22. Find the volume of a cylinder with a height of 30 millimeters and a radius of 5 millimeters. Use 3.14 for π.

23. The diameter of this cylinder is 4 cm. Its height is 10 cm. Find its volume.



24. A can of soup has a diameter of about 5 cm and a height of about 8 cm. The volume of the can is about how many cubic centimeters? Round to the nearest whole number.



Unit Multipliers

A unit multiplier is a fraction that equals 1 and that is written with two different units of measure. When the numerator and denominator of a fraction are equal, the fraction equals 1.

Example: 1 ft equals 12 inches, so we can form two unit multipliers:

1ft/ 12 in. and 12 in./ 1 ft

We can use unit multipliers to help convert from one unit to another

Example: Convert 60 inches to feet

60 in./ 1 times 1 ft/ 12 in.

Answer is 5 ft because the inches cancel out, and 60/ 12 is 5.

---

1. Use a unit multiplier to convert 128 ounces to pounds.

2. Use a unit multiplier to convert 1470 yards to feet.

3. Use a unit multiplier to convert 5500 pounds to tons.

4. Use a unit multiplier to convert 3.2 tons to pounds.

   [A] 64,000 lb [B] 400 lb [C] 0.0016 lb [D] 6400 lb

5. Use a unit multiplier to convert 48 ounces to pounds.

6. Use a unit multiplier to convert 2550 yards to feet.

7. Use a unit multiplier to convert 6.4 tons to pounds.

8. Use a unit multiplier to convert 5800 pounds to tons.

   [A] 2.9 tons [B] 3.9 tons [C] 1.45 tons [D] 5.8 tons

9. Use a unit multiplier to convert 64 ounces to pounds.

10. Use a unit multiplier to convert 1890 yards to feet.

11. Use a unit multiplier to convert 1700 pounds to tons.

12. Use a unit multiplier to convert 12.8 tons to pounds.

[A] 0.0064 lb [B] 256,000 lb [C] 25,600 lb [D] 1600 lb

13. Use a unit multiplier to convert 144 ounces to pounds.

14. Use a unit multiplier to convert 1320 yards to feet.

15. Use a unit multiplier to convert 9.6 tons to pounds.

16. Use a unit multiplier to convert 5300 pounds to tons.

[A] 1.325 tons [B] 5.3 tons [C] 3.5 tons [D] 2.65 tons

Section Three

Answer Keys

Skill Review: Story Problem Equations

[1] 962

[2] 40¢

[3] 125

[4] 5

[5] $51

[6] $4.85

[7] 14°F

[8] 2120 m

[9] 794 ft

[10] 73 yr

[11] 446 yr

[12] 1628

[13] 2 hr 35 min

[14] 2 hr 25 min

[15] 4:55 a.m.

[16] 6075

[17] 15,544

[18] $0.41

[19] 18

[20] 24

[21] 34

Skill Review: Add/ Subtract/ Multiply/ Divide--Decimals

[1] hundredths

[2] 2

[3] 4

[4] 0.5

[5] 6

[6] 0.79

[7] 30.15

[8] 7.09

[9] 10.05

[10] 0.0153

[11] 3.24

[12] 10.4

[13] 3.7

[14] 0.0004

[15] 10.011

[16] 0.3

[17] 0.03

[18] 1.1 mi

[19] 7.2

[20] 4

[21] 34

[22] [B]

[23] 0.551

[24] 1.78

[25] 0.28

Skill Review: Add/ Subtract/ Multiply/ Divide--Fractions

[1] 1

[2] $\frac{3}{7}$

[3] $\frac{3}{7}$

[4] $5\frac{1}{6}$

[5] $10\frac{1}{6}$

[6] $5\frac{5}{12}$

[7] 1

[8] $1\frac{1}{2}$

[9] $3\frac{19}{20}$

[10] $6\frac{1}{3}$

[11] $5\frac{1}{3}$

[12] $1\frac{1}{3}$

[13] $1\frac{4}{7}$

[14] $2\frac{2}{3}$

[15] $1\frac{1}{3}$

[16] $\frac{1}{10}$

[17] $2\frac{13}{15}$

[18] $3\frac{3}{4}$

[19] $\frac{4}{21}$

[20] $\frac{18}{5}$

[21] $1\frac{1}{2}$ in.

[22] $2\frac{1}{32}$

[23] $15\frac{5}{12}$

[24] $8\frac{4}{7}$

[25] 36

[26] 8

[27] 9

[28] $\frac{24}{35}$

[29] $1\frac{13}{35}$

[30] $1\frac{3}{5}$

Fractions/ Decimals/ Percents

[1] $\frac{3}{20}$ ____________________

[2] $\frac{61}{100}$ ____________________

[3] $\frac{29}{100}$ ____________________

[4] $\frac{9}{80}$ ____________________

[5] $\frac{1}{35}$ ____________________

[6] $\frac{13}{80}$ ____________________

[7] $\frac{81}{100}$ ____________________

[8] 0.072 ____________________

[9] 0.3 ____________________

[10] $\frac{13}{20}$ ____________________

[11] $9\frac{17}{20}$ ____________________

[12] $\frac{33}{200}$ ____________________

[13] 0.2

[14] 0.375

[15] 4.375

[16] 75%

[17] 12%

[18] 3%

[19] $12\frac{1}{2}\%$

[20] $162\frac{1}{2}\%$

[21] 62.7%

[22] $\frac{7}{25}$

[23]

Fraction	Decimal	Percent
$\frac{17}{25}$	0.68	68%

[24] $\frac{31}{50}$

[25] [B]

Equations

[1] 18

[2] 38

[3] 64

[4] 7

[5] 39

[6] 146

[7] 15

[8] 3

[9] 8

[10] 18

[11] 72

[12] 23

[13] 6

[14] 7

[15] 3

[16] 10

[17] 10

[18] 7

Order of Operations

[1] 9

[2] 16

[3] 54

[4] 5

[5] 16

[6] 21

[7] 30

[8] 20

[9] 5

[10] 19

[11] 21

[12] 0.35

[13] 30

[14] 66

[15] 26

[16] 6

[17] 12

[18] 42

Integers

[1] –8

[2] –7

[3] –15

[4] –9

[5] 6

[6] –2

[7] –20

[8] 25

[9] –18

[10] 50

[11] –1

[12] 0

[13] –18

[14] +5

[15] –72

[16] +3

[17] -15

[18] -6

[19] -28

[20] -4

Ratios/ Proportions

[1] $\frac{3}{8}$

[2] $\frac{13}{18}$

[3] $\frac{13}{16}$

[4] (a) 3
(b) 12

[5] (a) 11
(b) 77

[6] (a) 6
(b) 30

[7] 7363

[8] 693

[9] 15

[10] 4

[11] $\frac{6}{10}$

[12] $\frac{3}{12}=\frac{4}{16}$

[13] 12

[14] 5

[15] 60

[16] 35

[17] 14

[18] 80

[19] 56

[20] 160

[21] 12

Formulas: Area/ Volume/ Circumference

[1] 35 ft^2

(a) 16 in.

[2] (b) 16 $in.^2$

[3] 35 cm^2

[4] 48 cm^2

[5] 20 cm^2

[6] 80 cm^2

[7] 128 yd^2

[8] 120 m^2

[9] 44 ft^2

[10] 2289.06 km^2

[11] 615.44 m^2

[12] 314 cm^2

[13] 31 ft^2

[14] 600 m^2

[15] 30 ft^2

[16] 87.92 in.

[17] 23.86 cm

[18] 33.91 m

[19] 100

[20] 512 $in.^3$

[21] 720 m^3

[22] 2355.00 mm^3

[23] 125.6 cm

[24] 157 cm^3

Unit Multipliers

[1] 8 lb

[2] 4410 ft

[3] 2.75 tons

[4] [D]

[5] 3 lb

[6] 7650 ft

[7] 12,800 lb

[8] [A]

[9] 4 lb

[10] 5670 ft

[11] 0.85 tons

[12] [C]

[13] 9 lb

[14] 3960 ft

[15] 19,200 lb

[16] [D]