Mathematics

Diagnostic Tests 500-800

Sunrise Edition

Name _____

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MATH 500-800 Diagnostic Tests

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MATH 500-800
DIAGNOSTIC TESTS

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Notes for the Teacher

Why Diagnostic Testing?

Diagnostic tests are specifically designed to determine where a student should begin in the curriculum. Results from these tests give better direction for placement than a student's age or grade level since the course of study varies so much between schools and curricula.

What Portion of This Booklet Should a Student Complete?

This book covers four levels—500, 600, 700, and 800. Use this chart to decide which ones to work through.

Grade Student is Entering	Work through levels
2-5	Use test booklet 100-400.
6	500*
7	500-600
8	600-700
9	700-800
10 and up	Use test booklet 500-800.

*It is advisable that grade 6 students also work through test level 400.

How Should the Test be Administered?

Time. This is not a timed test. Students may take as much time as needed. Give periodic breaks, at least five to ten minutes every hour, and more often for younger students. Ideally, testing should be spread over a two-day period. Test weariness gives unreliable test results.

Guidance. You may help students understand instructions; however, do not hint at solutions to problems.

Calculators. Allow students to use a calculator for designated calculator exercises only.

Environment. Inform students that the test is important, but avoid a tense atmosphere. Help them to feel that the best they can do is good enough. Check comfort factors such as lighting and ventilation. Keep noise and other disturbances to a minimum.

Progress. **For Levels 500-800 (Sunrise Math)** The different concepts in *Sunrise Edition* are learned incrementally and spread throughout the year. The activities in the tests are grouped by concepts. The student should begin with the first concept and do as many activities as possible in each group.

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How Do I Score the Test?

Using the answers in the Teacher's Manual, put a mark through the number of each question the student answered incorrectly.

For Levels 500-800 (Sunrise Math). Determine the number of activities done correctly for the level.

How Do I Then Determine Placement?

Use the *Diagnostic Test Summary* page found on the next page of this book.

1. Fill in the **Diagnostic Test Summary** on page vi. If you are enrolled with Homeschool Plus at Christian Light Education, also fill in the second summary sheet on page viii. Tear out this perforated sheet and send it to Homeschool Plus and retain a copy for yourself. If you are not enrolled with Homeschool Plus, ignore the extra summary sheet.
2. **For Level 500 (Sunrise Math).** If the student has 76 or more correct answers, he is prepared for Level 600. If less than 76 are correct, the student is not prepared for Level 600 and should begin with *Sunrise Math Level 500.*
3. **For Level 600 (Sunrise Math).** If the student has 61 or more correct answers, he is prepared for Level 700. If less than 61 are correct, the student is not prepared for Level 700 and should begin with *Sunrise Math Level 600.*
4. **For Level 700 (Sunrise Math).** If the student has 61 or more correct answers, he is prepared for level 800. If less than 61 are correct, the student is not prepared for Level 800 and should begin with *Sunrise Math Level 700.*
5. **For Level 800 (Sunrise Math).** If the student has 63 or more correct answers, he is prepared for level 900. If less than 63 are correct, the student is not prepared for Level 900 and should begin with *Sunrise Math Level 800.*

If you have questions or need further assistance, feel free to contact CLE by phone (540-434-0750), FAX (540-433-8896), E-mail (homeschool @clp.org), or write us at P.O. Box 1212, Harrisonburg, VA 22803-1212.

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Diagnostic Test Summary

Math 500-800

Name _____ Date _____

LightUnit	Amount Correct
Level 500	_____
Level 600	_____
Level 700	_____
Level 800	_____

Performance Level–Student will begin with Level _____

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3. **For Level 600 (Sunrise Math).** If the student has 61 or more correct answers, he is prepared for Level 700. If less than 61 are correct, the student is not prepared for Level 700 and should begin with *Sunrise Math Level 600.*
4. **For Level 700 (Sunrise Math).** If the student has 61 or more correct answers, he is prepared for level 800. If less than 61 are correct, the student is not prepared for Level 800 and should begin with *Sunrise Math Level 700.*
5. **For Level 800 (Sunrise Math).** If the student has 63 or more correct answers, he is prepared for level 900. If less than 63 are correct, the student is not prepared for Level 900 and should begin with *Sunrise Math Level 800.*

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Diagnostic Test Summary

Math 500-800

Name _____ Date _____

LightUnit	Amount Correct
Level 500	_____
Level 600	_____
Level 700	_____
Level 800	_____

Performance Level–Student will begin with Level _____

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Level 500

Algebra ☐ of 15 problems correct

Solve.

1. 5 squared = _____ **2.** 9 squared = _____ **3.** 2 squared = _____

4. $\sqrt{16}$ = _____ **5.** $\sqrt{49}$ = _____ **6.** $\sqrt{100}$ = _____

Simplify the expression.

7. 10 ÷ 2 + 6 × 8 **8.** 25 ÷ (10 – 5) + 3 × 2

Combine the integers.

9. –2 + 4 = _____ **10.** –3 + (–5) = _____ **11.** 4 + (–4) = _____

Solve and check the equations.

Check Check

12. $n + 3 = 9$ **13.** **14.** $n - 4 = 9$ **15.**

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Data ☐ of 2 problems correct

Solve.

16. Grandma's Fruit Basket made 38 pints of jam on Monday, 44 pints on Tuesday, and 26 pints on Wednesday. What is the average pints of jam they made?

_____

17. Swiss Pantry sold 160 coconut cakes the week of Christmas. What was the average number of cakes they sold in 5 days?

_____

Decimal Computation ☐ of 6 problems correct

Copy and solve.

18. 43 + 4.587 + 42.6 = _____

19. 93.01 – 5.159 = _____

Solve.

20. $24\overline{)1.272}$

21. $36\overline{)4.32}$

22.
$$\begin{array}{r} 0.236 \\ \times\ 0.25 \\ \hline \end{array}$$

23.
$$\begin{array}{r} 1.42 \\ \times\ 0.3 \\ \hline \end{array}$$

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Decimal Concepts ☐ of 15 problems correct

Rewrite the fractions as decimals.

24. $\frac{1}{2}$ = _____ **25.** $\frac{3}{4}$ = _____ **26.** $\frac{1}{4}$ = _____

Write the answers.

27. 0.3 ÷ 100 = _____ **28.** 12.3 ÷ 1,000 = _____ **29.** 472 ÷ 10 = _____

30. 0.23 × 1,000 = _____ **31.** 46 × 100 = _____ **32.** 0.6 × 10 = _____

Match.

33. _____ hecto	**a.** 10	**36.** _____ milli	**a.** 0.1
34. _____ kilo	**b.** 100	**37.** _____ deci	**b.** 0.01
35. _____ deca	**c.** 1,000	**38.** _____ centi	**c.** 0.001

Division ☐ of 7 problems correct

Solve.

39. $4\overline{)3,895}$ **40.** $24\overline{)9,675}$ **41.** $50\overline{)7,852}$

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42. $7\overline{)\$45.64}$

43. $27\overline{)1{,}511}$

44. $45\overline{)369}$

45. $43\overline{)1{,}925}$

Fractions ☐ of 10 problems correct

Solve.

46. $9 - 5\frac{4}{6}$

47. $7\frac{5}{6} + 4\frac{1}{3}$

48. $15\frac{7}{9} - 9\frac{1}{3}$

49. $9\frac{1}{3} - 5\frac{5}{6}$

50. $4\frac{1}{2} \times 6\frac{2}{3} =$ _____

51. $4 \times 2\frac{1}{3} =$ _____

52. $\frac{4}{5} \times \frac{2}{3} =$ _____

53. $1\frac{1}{4} \div 7\frac{1}{2} =$ _____

54. $3 \div 4\frac{1}{3} =$ _____

55. $\frac{2}{3} \div \frac{3}{4} =$ _____

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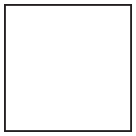
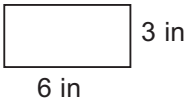
Geometry ☐ of 16 problems correct

Write the formula and find the area.



56.



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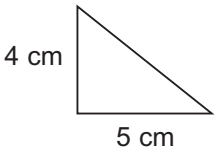
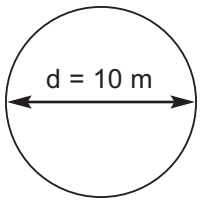


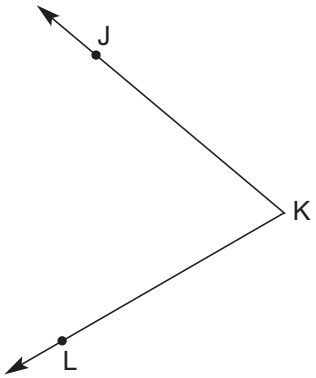
58.

Write the formula and find the circumference.

59.



Follow the directions.



60. Measure the angle. _____°

61. Name the angle. _____

62. Name the vertex. _____

63. Draw a 145° angle.

64. Name it ∠DEF.

65. Are ∠JKL and ∠DEF congruent? _____

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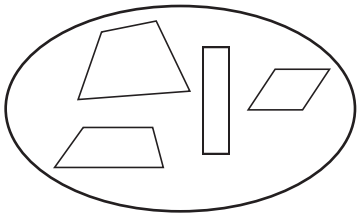
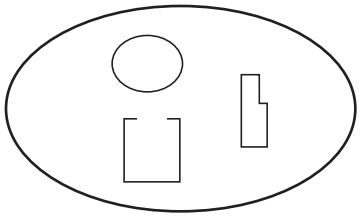
Answer the questions.

66. Which set has only quadrilaterals? _____

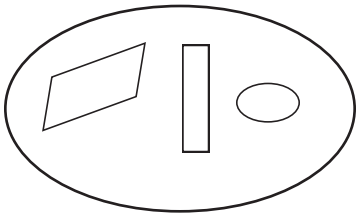
Set A



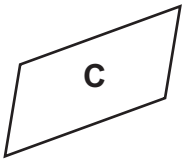
Set B



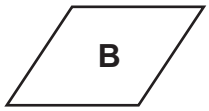
Set C

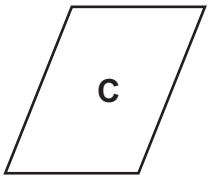


67. Which figure is not a parallelogram? _____



68. Which figure is not a rhombus? _____





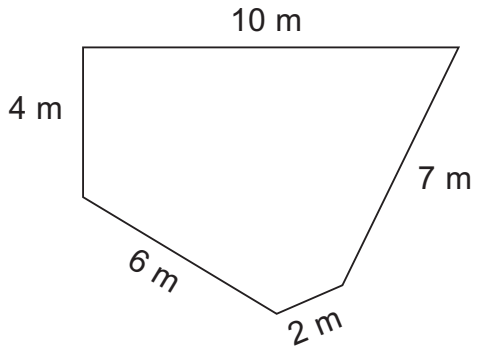
Fill in the blanks.

69. A circle has _____°.

70. A half circle has _____°.

Find the perimeter.

71. _____



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Numbers ☐ of 13 problems correct

Write the digit that holds each place.

569,034,287,145,258

72. Hundred trillions place _____

73. Millions place _____

74. Ten billions place _____

Write the digit that holds each place.

123.059

75. Hundredths place _____

76. Thousandths place _____

Write the numbers.

77. Three trillion, four hundred twenty-five _____

78. Twenty-six thousandths _____

Write <, >, or = .

79. 0.02 ☐ 0.2 **80.** 0.30 ☐ 0.3 **81.** 0.4 ☐ 0.35

Order the decimals from least to greatest.

82. 0.02 0.2 0.225 0.205 _____ _____ _____ _____

Match.

83. _____ prime numbers **a.** 25, 51, 39

84. _____ composite numbers **b.** 2, 3, 5, 7

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Percents ☐ of 7 problems correct

Fill in the missing fractions, decimals, and percents.

Fraction	**85.** $\frac{1}{2}$ or $\frac{50}{100}$	**86.** _____	**87.** _____	**88.** $\frac{1}{4}$
Decimal	_____	0.38	_____	_____
Percent	_____	_____	75%	_____

Write equivalent fractions with denominators of 100. Then write them as percents.

89. $\frac{7}{20}$ = _____ = _____ **90.** $\frac{6}{25}$ = _____ = _____ **91.** $\frac{8}{10}$ = _____ = _____

Ratio and Proportion ☐ of 6 problems correct

Change the ratios to fraction form. Multiply by 5 to make larger equivalent ratios.

92. 2 to 3 = _____ = _____ **93.** 9 : 5 = _____ = _____

Change the ratios to fraction form. Then reduce to simplest form.

94. 5 to 15 = _____ = _____ **95.** 6 : 4 = _____ = _____

Set up proportions and solve.

96. If it takes 96 ounces of milk for 8 children, how many ounces will it take for 3 children? _____ _____

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Set up proportions and solve.

97. If a snail crawls 3 centimeters in 2 minutes how long will it take to crawl 9 centimeters? _____ _____

Rounding ☐ of 12 problems correct

Round the numbers to the nearest . . .

hundred.	**98.** 4,256	_____	**99.** 4,996	_____
ten.	**100.** 3,299	_____	**101.** 2,235	_____
hundredths.	**102.** 0.356	_____	**103.** 0.924	_____
thousandths.	**104.** 0.6139	_____	**105.** 0.2531	_____
tenths.	**106.** 0.213	_____	**107.** 0.396	_____
whole number.	**108.** 3.33	_____	**109.** 4.92	_____

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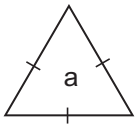
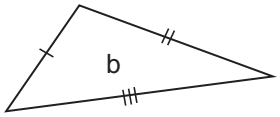
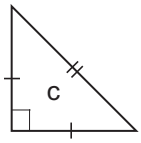
Level 600

Geometry Facts and Applications ☐ of 19 problems correct

Classify the triangles by length of sides. Choose from *equilateral*, *isosceles*, or *scalene*.



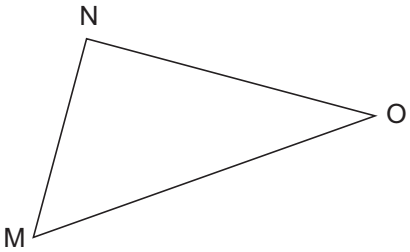




1. _____ **2.** _____ **3.** _____

Classify by angle.

4. Which triangle is also a right triangle? _____



Measure the three angles of ΔMNO. Write the answers.

5. ∠N _____° **6.** ∠O _____° **7.** ∠M _____°

8. The sum of the measures of the three angles is _____°.

Fill in the blanks.

9. The sum of the angles in Figure 1 is _____°.

10. The sum of the angles in Figure 2 is _____°.

11. Name two chords from Figure 3. _____ _____

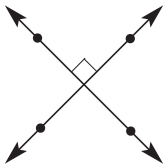


Figure 1

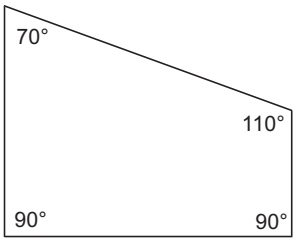


Figure 2

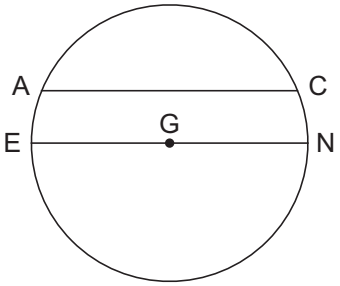


Figure 3

Answer the question.

12. Which figure above is a trapezoid? _____

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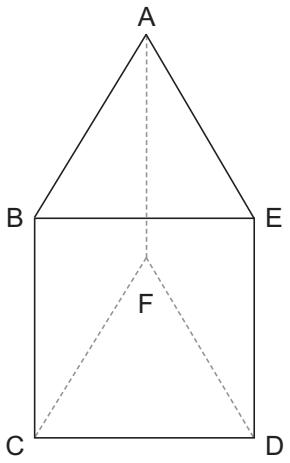
Fill in the blanks.

13. An acute angle measures between _____° and _____°.

14. A straight angle has _____°.

15. An obtuse angle measures between _____° and _____°.



Tell whether each part is a *face*, an *edge*, or a *vertex*.

16. BE _____

17. ABE _____

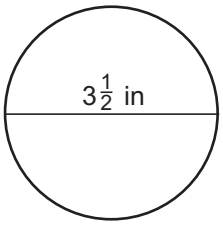
18. A _____

19. BEDC _____

Geometry Formulas ☐ of 5 problems correct

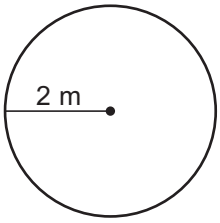
Use the formula to find the circumference of the circle. Use $\frac{22}{7}$ for π.

20. The circumference is _____.



Use the formula to find the area of the circle. Use 3.14 for π.

21. The area is _____.



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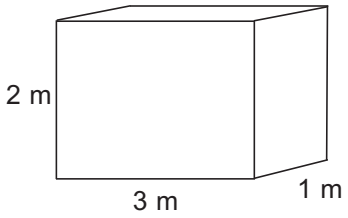
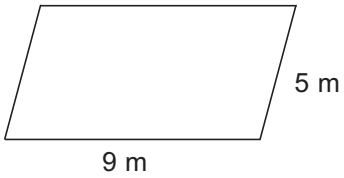
Use the formula to find the volume.

22. The volume is _____.



Use the formula to find the perimeter of the parallelogram and rectangle.



23. The perimeter is _____.

24. The perimeter is _____.

Division ☐ of 3 problems correct

Divide. Write any remainder with R.

25. $324\overline{)6,846}$

26. $546\overline{)3,642}$

27. $461\overline{)9,983}$

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Division with Decimals ☐ of 7 problems correct

Convert to decimals rounded to the nearest hundredth.

28. $\frac{2}{3} \approx$ _____

29. $2\frac{3}{7} \approx$ _____

Divide. Write each quotient with a repeating bar.

30. $15\overline{)13}$

31. $88\overline{)112}$

Divide.

32. $0.7\overline{)29.4}$

33. $1.24\overline{)15.5}$

34. $1.53\overline{)3.519}$

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Percent Concepts and Applications ☐ of 15 problems correct

Write the percents as decimals.

35. 44% = _____ **36.** 165% = _____ **37.** 340% = _____ **38.** 30% = _____

Write the decimals as percents.

39. 0.23 = _____ **40.** 0.8 = _____ **41.** 2.13 = _____ **42.** 5.6 = _____

Write each percent as a fraction or mixed number over 100. Reduce to simplest form.

43. 70% = _____ = _____ **44.** 260% = _____ = _____

Convert to a decimal rounded to the nearest hundredth. Then write as a percent.

45. $1\frac{2}{9} \approx$ _____ = _____

46. $\frac{5}{8} \approx$ _____ = _____

Find the total cost.

47. $8.25 with 5% sales tax = _____

Find the sale price.

The regular price was $12.69.
The sale is 10% off.

48. The sale price is _____.

Find the final cost after the discount.

The cost was $53 before a 5% discount.

49. The final cost is _____.

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Fraction Mulitplication ☐ of 3 problems correct

Multiply.

50. $\frac{2}{3} \times \frac{1}{2} \times \frac{6}{7} =$ _____

51. $1\frac{4}{5} \times 3\frac{3}{4} \times 3\frac{1}{3} =$ _____

52. $2 \times \frac{3}{4} \times 4\frac{1}{2} =$ _____

Expressions and Equations ☐ of 17 problems correct

Simplify the expressions.

53. $(2 + 3)(7 - 4)$

54. $3 \cdot 7$

55. $7x + 4 + 6 - 3x$

Simplify the expressions. Substitute 10 for *n*.

56. $6n$

57. $\frac{n}{2}$

58. $\frac{30}{n}$

59. $4n + 3$

Solve and check.

60. $5n - 30 = 10$ **61.** ☑

62. $7b + 17 = 45$ **63.** ☑

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Finish showing the following properties using the variables *a*, *b*, and *c*.

64. The commutative property of addition $a + b =$ _____

65. The commutative property of multiplication $a \cdot b =$ _____

66. The associative property of addition $(a + b) + c =$ _____

67. The associative property of multiplication $(a \cdot b) \cdot c =$ _____

Use the distributive property to simplify these expressions.

68. $6(y + 4)$

69. $14(a + 2)$

Proportions ☐ of 5 problems correct

Solve, using proportions if needed.

70. 36 months = _____ years

71. 9 feet = _____ inches

Solve. Use proportions if necessary. If the division does not come out evenly, round to the nearest whole number or percent.

72. What is 120% of 25? _____

73. 15 is 10% of what number? _____

74. 26 is what percent of 45? _____

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Exponents, Integers, and Coordinates ☐ of 11 problems correct

Multiply to find the number.

75. 4^3 = _____ **76.** 2^4 = _____

Combine integers.

77. –7 + (–4) _____ **78.** –11 + 14 = _____ **79.** 16 + (–16) = _____

Write the ordered pair for each point.

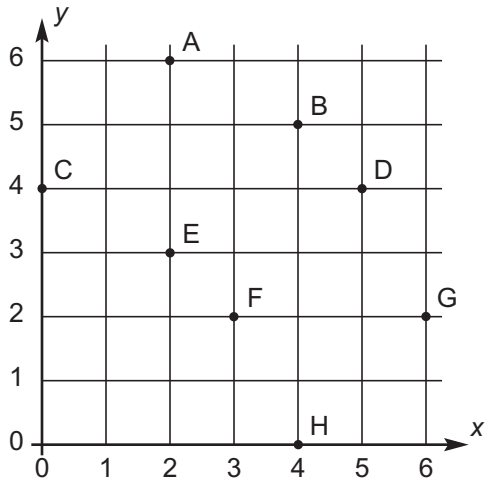
80. F _____ **81.** H _____

Write the point for each ordered pair.

82. (2, 3) _____ **83.** (0, 4) _____

Plot these points on the grid.

84. K (4, 3) **85.** J (2, 0)



Primes and Factors ☐ of 2 problems correct

List the prime factors for each number.

86. 210 = _____ **87.** 72 = _____

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Level 700

Integers ☐ of 12 problems correct

Change each subtraction to adding the opposite. Then combine.

1. –2 – (–14) _____

2. 5 – (+24) _____

3. 3 – (–6) _____

Write the products.

4. –4 × (–8) = _____

5. –2 × 10 = _____

6. 5 × (–3) = _____

Write the quotients.

7. –36 ÷ 4 = _____

8. –42 ÷ (–6) = _____

9. $\frac{-15}{-3}$ = _____

10. $\frac{45}{-9}$ = _____

11. $-2\overline{)-18}$

12. $3\overline{)-33}$

Expressions ☐ of 10 problems correct

Simplify the expressions.

13. $2n \cdot 5$

14. $7 \cdot 3c$

15. $(8y)9$

16. $(14)2x$

Simplify the expressions.

17. $7^2 - \frac{10}{2} + 3^2 \cdot 2^3$

18. $\sqrt{144} - \frac{35}{7} \cdot 2$

19. $8^2 - (10 + 4)3$

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Simplify and solve.

20. $\dfrac{\frac{3}{4}}{3\frac{1}{2}}$ = _____

21. $\dfrac{5}{2\frac{1}{2}}$ = _____

22. $\dfrac{\frac{3}{4}}{12}$ = _____

Solving Equations ☐ of 11 problems correct

Solve and check.

23. $12 + \frac{n}{5} = 22$

24. ☑

25. $17 = \frac{n}{2} + 11$

26. ☑

Solve. Write remainders as fractions in simplest form.

27. $5n - 8 = 14$

28. $6n + 8 = 13$

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Level 700

Simplify and solve.

29. $n \cdot 2^3 = 8 \div 4 \cdot 4^2$

30. $6n - 2 = (10 + 1)2$

31. $7(x + 3) = 5 + 51$

32. $26 \div 2 \cdot 3 = 5n + 7n + 3 \cdot 5$

33. $3n + 6n - n = 28 \div 4$

Powers and Exponents ☐ of 7 problems correct

Write the products.

34. $5^0 =$ _____

35. $10^1 =$ _____

36. $10^4 =$ _____

Write as powers of 10.

37. 0.0001 = _____

38. 1,000,000 = _____

Write the products. Write fractions for those with negative exponents.

39. $3^{-2} =$ _____

40. $5^{-3} =$ _____

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Fraction, Decimal, Percent Equivalents ☐ of 8 problems correct

Write the decimal equivalent for each fraction. Use a bar for repeating decimals.

41. The repeating decimal for $\frac{1}{3}$ is _____.

42. The repeating decimal for $\frac{5}{6}$ is _____.

43. The decimal for $\frac{1}{8}$ is _____.

44. The decimal for $\frac{5}{8}$ is _____.

Write the percent equivalent for each fraction. Write remainders as fractions of a percent.

45. $\frac{2}{3}$ = _____%

46. $\frac{1}{6}$ = _____%

47. $\frac{3}{8}$ = _____%

48. $\frac{7}{8}$ = _____%

U.S./Metric Conversions ☐ of 5 problems correct

Use the conversion ratios to convert from one measurement system to the other. Round each answer to the nearest whole unit.

49. 175 km ≈ _____ miles

50. 62 in ≈ _____ cm

51. 200 L ≈ _____ gal

52. 61 kg ≈ _____ lb

53. 125 yd ≈ _____ m

Percents ☐ of 11 problems correct

Find the total income.

54. A salesman earns $950 per month plus 8% commission sales of $15,625. What was his income last month? _____

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Level 700

Change to decimal percents, then to decimals.

55. $4\frac{3}{4}\%$ = _____ = _____

56. $\frac{3}{5}\%$ = _____ = _____

Solve. Round to the nearest whole number or the nearest cent.

57. 12% less than 25 = _____

58. 15% more than $14.50 = _____

To the nearest whole percent, find the percent of increase or decrease.

59. A change from 55 to 125 is an increase of _____%.

60. A change from 40 to 35 is a decrease of _____%.

Solve.

$3,500 deposited at $2\frac{1}{2}\%$ interest for 5 years.

61. Amount of interest earned: _____

62. Total principal with interest: _____

$2,000 loaned out at 5% interest for $\frac{3}{4}$ year.

63. Amount of interest owed: _____

64. Total amount to repay: _____

Inequalities ☐ of 6 problems correct

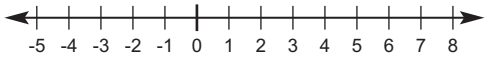
Solve each inequality. Graph the solutions.

65. $x + 2 \geq 10$

66.

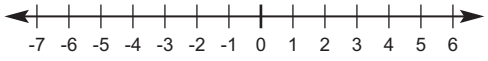
67. $x + 3 < 3$

68.



69. $x + 5 \leq 2$

70.



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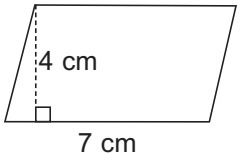
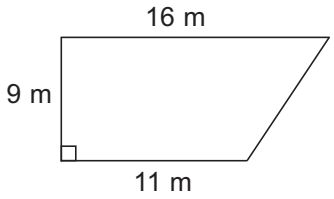
Area and Volume ☐ of 6 problems correct

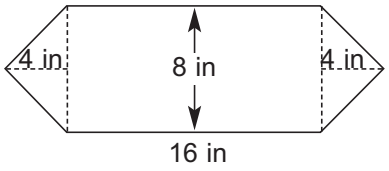
Use the formulas to find the areas of the parallelogram and the trapezoid.





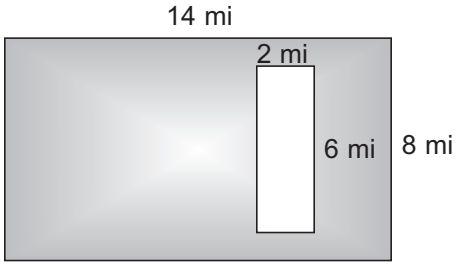
71. _____ **72.** _____

Find the area. Show your work.



73. _____

Find the area of the shaded part. Show your work.



74. _____

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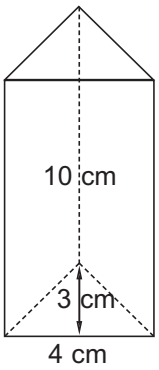
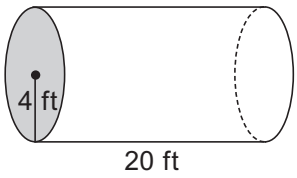
Level 700

Use the formula to find the volumes of the triangular prism and the cylinder. Use 3.14 for pi.





75. _____ **76.** _____

Prime Numbers ☐ of 5 problems correct

Find the prime factors and the GCF.

77. Prime factors of 36 = _____

78. Prime factors of 90 = _____

79. GCF = _____

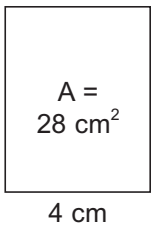
List the prime factors using exponents.

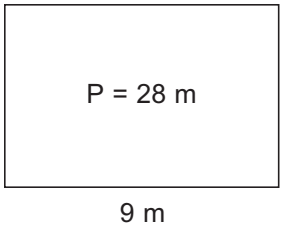
80. Prime factors of 625 = _____

81. Prime factors of 225 = _____

Missing Dimensions ☐ of 6 problems correct

Use the area and perimeter formulas to find the missing dimension for each figure.





82. The length is _____ **83.** The width is _____.

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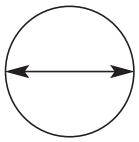
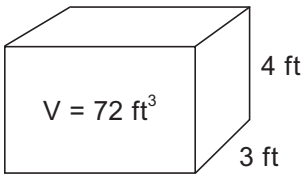
Use the circumference formula to find the diameter of the circle. Use 3.14 for pi.



C = 20.41 cm

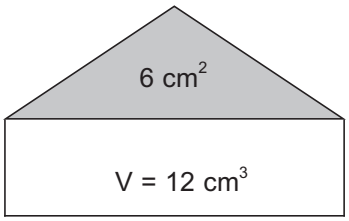
84. The diameter is _____.

Use the volume formula to find the length of the rectangular prism.



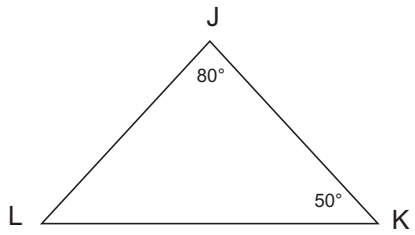
85. The length is _____.

Use the volume formula to find the height of the triangular prism.



86. The height is _____.

Solve for the unknown angle measure.



87. ∠L = _____°

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Level 800

Algebra ____ of 42 problems correct

Use the distributive property to simplify.

1. $-5(3n + 2)$

2. $-7(-6n - 4)$

Simplify.

3. $3 - 6 + 13 + 2 - 15$

4. $4 + 5 - 1 + 12 - 3 - 7$

Write the ordered pair for each point.

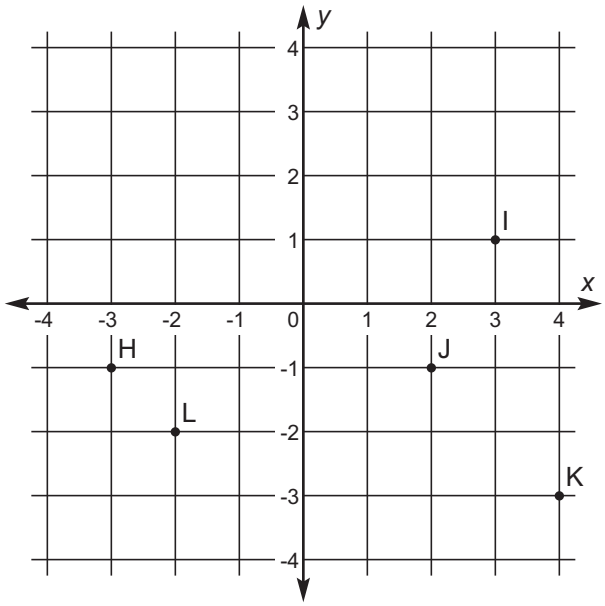
5. L _____

6. K _____

Write the letter of the point for each ordered pair.

7. (2, –1) _____

8. (–3, –1) _____



Plot these points on the grid.

9. A (1 , –2)

10. R (–3, 3)

Combine like terms.

11. $4b - 6b + 5d + 3 + 2d$

12. $3x + 7y - 10y + 2x + 6$

13.
$$\begin{array}{r} -9x + 9y - 9 \\ -\ 10y \\ \hline \end{array}$$

14.
$$\begin{array}{r} -9x + 9y - 9 \\ +\ 3x \\ \hline \end{array}$$

Simplify.

15. $6x^3 - 6x^2 + 4 - 2x^3 + 6$

16.
$$\begin{array}{r} 7y^2 - 3y^2 + y \\ +\ 4y^2 \\ \hline \end{array}$$

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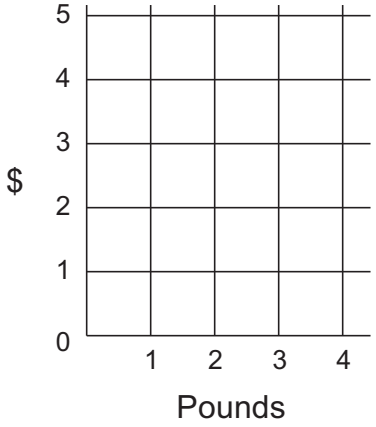
Finish the table of values.

17. 1 pound of turkey cost $1.50.

Pounds	$
1	
2	
3	

18. Plot the points on the graph and draw the line for the linear relation.



Simplify.

19. $6a^2 \cdot a^2 \cdot 3b$

20. $y^3 \cdot 4y^3 \cdot y^3$

Solve. Find the square root of each perfect square. If the square is not a perfect square, leave your answer under the radical sign.

21. $y^2 = 21$

22. $x^2 = 9$

23. $x^2 - 18 = 18$

Simplify.

24. $4\{[18 \div (2 + 1) + 6] - 12\}$

25. $\{[4 + (6 \cdot 3) + 2] \div 4 + 2\}2$

Reduce to simplest form.

26. $\frac{8x^2}{4y^3} =$

27. $\frac{14x^3y}{7x^2} =$

Simplify these expressions. Write the answers only.

28. $\frac{y^2}{y^{-2}}$

29. $x^4 \div x$

30. $\frac{t^3}{t^7}$

31. $s \div s^3$

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Level 800

Solve the equation for each value on the table and list the ordered pairs. Then graph the equation.

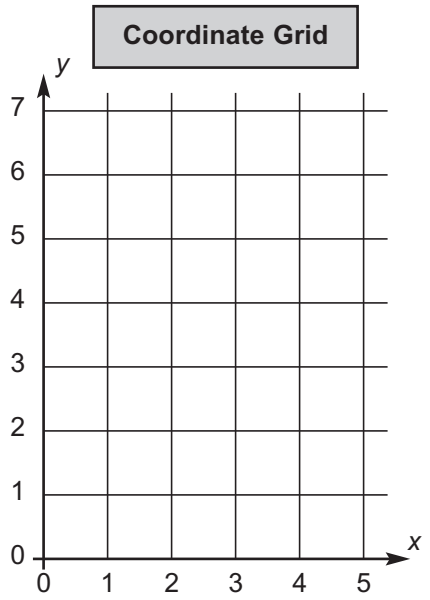
32. $5 = x + y$

Table of Values	
x	***y***
0	
1	
2	
3	

33.

Coordinates

34.



Simplify.

35. $\dfrac{9 - 2 \cdot 3 + 4}{7 \cdot 3 + 6} =$

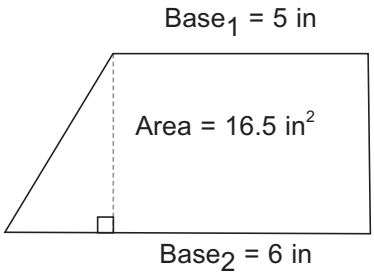
36. $\dfrac{3 + 5 \cdot 3}{6 \cdot 2 \cdot 3} =$

Solve.

37. $\frac{1}{4}x = 12$

38. $\frac{1}{3}x = 15$

Find the height of the trapezoid using fractional coefficients.



39. The height of the trapezoid is _____.

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Solve.

40. $-8a = 24$ **41.** $-3x = 16$ **42.** $-n = 10$

Interest ☐ of 8 problems correct

Solve. You may use a calculator for these exercises.

$4,500 loaned out at 5% interest for 90 days.

43. Amount of interest: _____

44. Total principal with interest: _____

$625 deposited at 5% interest for 8 months.

45. Amount of interest earned: _____

46. Total principal with interest: _____

Write as dollars.

47. 12.4 cents = _____ **48.** 123.3 cents = _____

Write as cents.

49. $0.491 = _____ **50.** $0.319 = _____

Factors ☐ of 2 problems correct

Find the LCM for the following sets of numbers. Use the steps below.

51. 25 and 30

List the prime factors with exponents for 25. _____

List the prime factors with exponents for 30. _____

List each prime factor with the largest exponent. _____

LCM = _____

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52. 9, 36 and 54

List the prime factors with exponents for 9. _____

List the prime factors with exponents for 36. _____

List the prime factors with exponents for 54. _____

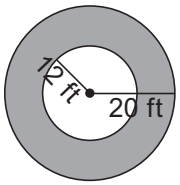
List each prime factor with the largest exponent. _____

LCM = _____

Geometry ☐ of 16 problems correct

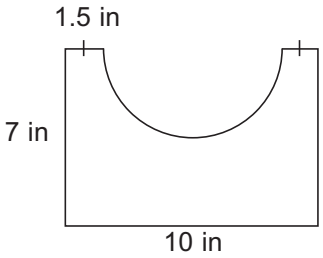
Find the area of the shaded part. Use 3.14 for pi. Show your work.

You may use a calculator for these exercises.



53. _____

Find the area of the irregular shape. Use $\frac{22}{7}$ for pi. Show your work.



54. _____

Fill in the blanks.

55. The *perpendicular* symbol is _____.

56. The *parallel* symbol is _____.

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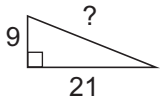
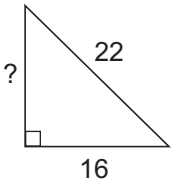
Using the Pythagorean theorem and a calculator, find the lengths of the missing sides. Round your answers to the nearest tenth. You may use a calculator for these exercises.

57.



58.

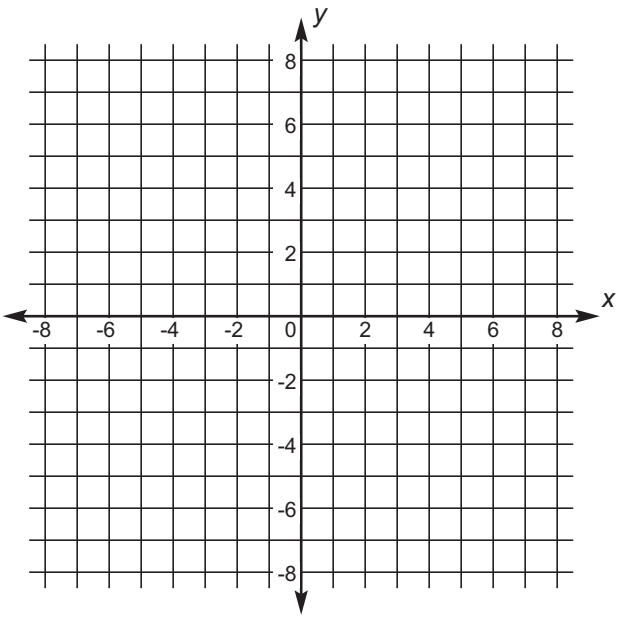


Solve the equation for each *x* value and complete the tables.

59. $x + 2 = y$

x	*y*
0	
2	
4	

60. Graph the solution.

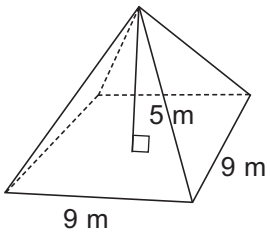


61. $\frac{x}{3} - 6 = y$

x	*y*
0	
6	
–6	

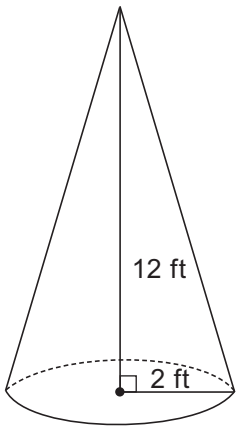
62. Graph the solution.

Find the volume of the pyramid. Formula: $V = \frac{1}{3}Bh$



63. _____

Find the volume of the cone. Formula: $V = \frac{1}{3}Bh$



64. _____

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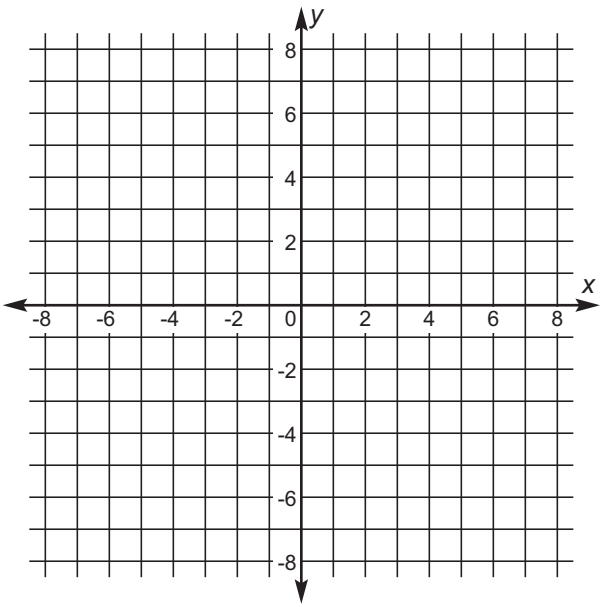
Find the distances between the points on the graph to the nearest tenth of a unit. You may use a calculator for these exercises.

65. From (–4, 2) to (–8, 4) is _____ units.



66. Graph the solution.

67. From (3, –2) to (7, –7) is _____ units.

68. Graph the solution.

Numbers ☐ of 18 problems correct

Label each number *rational* **or** *irrational.*

69. π _____ **70.** 6.5 _____ **71.** $\frac{80}{64}$ _____

72. $0.\overline{3}$ _____ **73.** $\frac{5}{11}$ _____ **74.** $\sqrt{3}$ _____

Change the following numbers to standard notation.

75. 3.42×10^4 = _____ **76.** 5.09×10^{-6} = _____

Change the following numbers to scientific notation.

77. 4,370,000 = _____ **78.** 0.0024 = _____

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Multiply the numbers in scientific notation.

79. $(0.4 \times 10^{3})(6 \times 10^{5}) =$ _____

80. $(1.4 \times 10^{-3})(3 \times 10^{-6}) =$ _____

Divide these numbers in scientific notation.

81. $(6.3 \times 10^{3}) \div (3 \times 10^{2}) =$ _____

82. $(10.2 \times 10^{4}) \div (2 \times 10^{-5}) =$ _____

Multiply or divide in scientific notation. Make sure your answers are in correct scientific notation.

83. $(5 \times 10^{-4})(3 \times 10^{2}) =$ _____

84. $(3.5 \times 10^{7})(7 \times 10^{9}) =$ _____

85. $(6.4 \times 10^{3}) \div (8 \times 10^{8}) =$ _____

86. $(8.1 \times 10^{6}) \div (9 \times 10^{-3}) =$ _____

Percents ☐ of 4 problems correct

In the first blank, write the decimal equivalent of the percent. In the second blank, round the decimal equivalent to the nearest thousandth.

87. $11\frac{2}{3}\% =$ _____ $\approx$ _____

88. $3\frac{3}{8}\% =$ _____ $\approx$ _____

Convert each percent to a decimal rounded to the nearest thousandth. Solve.

89. What is $16\frac{1}{3}\%$ of 70? _____

90. What is $6\frac{5}{8}\%$ of 25? _____

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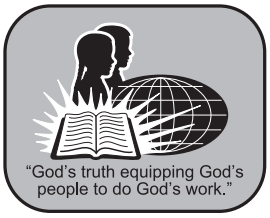

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