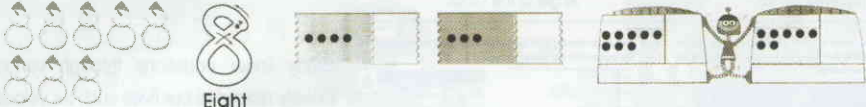


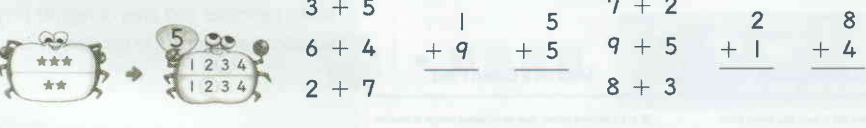
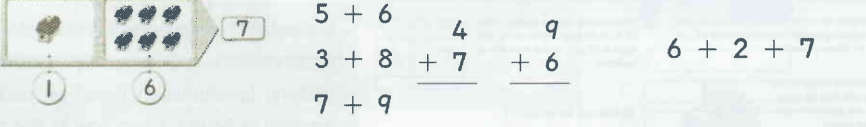

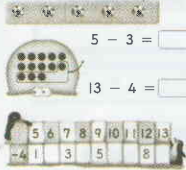
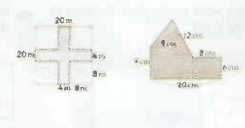
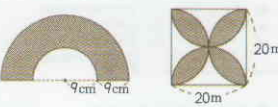
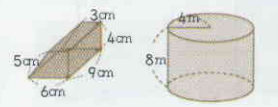


Description of Basic Thinking Math Curriculum

| Level | Samples | Summary |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 |  <p>Learning Numbers Practicing Numbers Up to 5 Practicing Numbers Up to 10</p> | <p>This helps children to write numbers correctly and learn numbers from 1 to 10. Since this is the basics of learning numbers, children must be allowed to continue their study until they can count numbers by intuition.</p> |
| 2 |  <p>Making 10 Practicing Numbers Up to 15 Practicing Numbers Up to 20</p> | <p>Children can read and write numbers correctly and they learn numbers from 11 to 30. By making 10 using semi solid objects, children are made to understand complements, and numbers above 10 will be expanded through grouping until numeric progression is completely fixed up to 30.</p> |
| 3 |  <p>Adding 1 Adding 3 Practicing Adding 1, 2 and 3 ①</p> | <p>Children learn the numerical order through expansion of numbers up to 120 and by studying adding 1, 2 and 3.</p> |
| 4 |  <p>Practicing Adding 1, 2 and 3 ② Subtracting 2 Practicing Subtracting 1, 2 and 3</p> | <p>Through studying adding 1, 2 and 3, the numerical order up to 120 is fixed. The complete study of this part is induced through verbal test. Also, children study subtracting 1, 2 and 3.</p> |
| 5 |  <p>Making Numbers Practicing Adding up to 10 Practicing Adding Two 1-Digit Numbers ③</p> | <p>Children are made to understand making numbers and through addition table, they develop mental arithmetic skill.</p> |
| 6 |  <p>Mental arithmetic (base 10 blocks, 5+6, 3+8, 7+9), 6+2+7</p> | <p>This lesson develops mental arithmetic of addition. Mental arithmetic is practiced to enable children to mentally calculate and answer addition with renaming.</p> |

| Level | Samples | | | Summary |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7 | <p>● There are 19 loaves of bread and 5 cakes. How many loaves of bread and cakes are there?</p> <p>Practicing (2-Digit) + (1-Digit)</p> | $\begin{array}{r} 9 + 2 + 9 \\ 9 + 5 + 8 \\ \hline \end{array}$ <p>Practicing Adding Three 1-Digit Numbers II</p> | $\begin{array}{r} 7 \quad 12 \\ 4 \quad 3 \\ \hline \end{array}$ $\begin{array}{r} 18 + 9 \\ 12 + 12 \\ \hline \end{array}$ $\begin{array}{r} 15 \quad 18 \\ + 9 \quad + 8 \\ \hline \end{array}$ <p>Reviewing Adding</p> | Based on the learning of plus table, this checks the complete understanding of (2-digits up to 19) + (1-digit) and practices and completes the mental arithmetic to enable answering intuitively. |
| 8 |  $\begin{array}{r} 9 - 6 = \square \\ 8 - 6 \\ \hline \end{array}$ <p>Simple Subtraction</p> |  <p>Practicing Subtraction ①</p> | $\begin{array}{r} 7 - 6 \\ 10 - 6 \\ 11 - 6 \\ 8 - 6 \\ 9 - 6 \\ \hline \end{array}$ $\begin{array}{r} 12 \\ - 8 \\ \hline \end{array}$ $\begin{array}{r} 13 \\ - 8 \\ \hline \end{array}$ <p>Practicing Subtraction ①</p> | Study subtraction table. Study to allow intuitive answers are given by understanding that subtraction and addition are inverse arithmetic. This develops the mental arithmetic of subtraction. |
| 9 | $\begin{array}{r} 20 - 6 \\ 21 - 6 \\ \hline \end{array}$ $\begin{array}{r} 22 \\ - 7 \\ \hline \end{array}$ $\begin{array}{r} 23 \\ - 9 \\ \hline \end{array}$ <p>Practicing (2-Digit) - (1-Digit)</p> | $\begin{array}{r} 19 - 13 \\ 23 - 12 \\ \hline \end{array}$ $\begin{array}{r} 22 \\ - 20 \\ \hline \end{array}$ <p>Practicing (2-Digit) - (2-Digit)</p> | $\begin{array}{r} 13 - 8 - 2 \\ 21 - 10 - 5 \\ \hline \end{array}$ <p>Practicing Subtracting with Three numbers</p> | Enable to give intuitive answer by understanding the concept, theory and method of (2-digit) - (1-digit). Complete the mental arithmetic of subtraction. |
| 10 | <p>● There are 58 children's books and 25 history books in Vicky's room. How many books are there in Vicky's room?</p> <p>Adding Numbers Up to 99</p> | $\begin{array}{r} 42 \\ + 74 \\ \hline \end{array}$ $\begin{array}{r} 74 \\ + 75 \\ \hline \end{array}$ $\begin{array}{r} 59 \\ + 78 \\ \hline \end{array}$ $64 + 46$ $87 + 95$ <p>Practicing Adding 2-Digit Numbers</p> | $\begin{array}{r} 362 \\ + 4 \\ \hline \end{array}$ $\begin{array}{r} 413 \\ + 274 \\ \hline \end{array}$ $\begin{array}{r} 655 \\ + 192 \\ \hline \end{array}$ $483 + 465$ <p>Practicing Adding 3-Digit Numbers ①</p> | Based on the mental arithmetic of addition, practice to carry out 2 digit addition without renaming mark. Complete the written arithmetic of addition. |
| 11 | $\begin{array}{r} 36 \\ - 3 \\ \hline \end{array}$ $\begin{array}{r} 75 \\ - 34 \\ \hline \end{array}$ $\begin{array}{r} 63 \\ - 17 \\ \hline \end{array}$ $28 - 9$ $93 - 57$ <p>Practicing Subtracting 2-Digit Numbers</p> | $33 + 46 + 7$ $43 - 9 - 7$ <p>Practicing Adding and Subtracting With Three Numbers</p> | <p>● Janice has 124 marbles. She used 85 of them to make a necklace. How many marbles does she have left?</p> <p>Practicing Subtracting 3-Digit Numbers</p> | Based on the mental arithmetic of subtraction, practice to subtract 2 digit subtraction without renaming mark. Complete the written arithmetic of subtraction. |
| 12 | $\begin{array}{r} 2 \times 1 \\ 2 \times 2 \\ 2 \times 3 \\ \hline \end{array}$ $\begin{array}{r} 5 \times 9 \\ 5 \times 8 \\ 5 \times 7 \\ \hline \end{array}$ $\begin{array}{r} 8 \times 1 \\ 8 \times 4 \\ 8 \times 8 \\ \hline \end{array}$ $\begin{array}{r} 6 \\ \times 4 \\ \hline \end{array}$ $\begin{array}{r} 7 \\ \times 0 \\ \hline \end{array}$ $\begin{array}{r} 9 \\ - 5 \\ \hline \end{array}$ <p>Practicing Multiplying</p> | <p>● In the Group Running event, there are 4 people on each team. If 8 teams competed in this event, how many people participated?</p> 100×9 $\begin{array}{r} 323 \\ \times 3 \\ \hline \end{array}$ $\begin{array}{r} 583 \\ \times 6 \\ \hline \end{array}$ <p>Practicing (1-Digit) × (1-Digit)</p> | $\begin{array}{r} 17 \\ \times 5 \\ \hline \end{array}$ $\begin{array}{r} 18 \\ \times 5 \\ \hline \end{array}$ $\begin{array}{r} 19 \\ \times 5 \\ \hline \end{array}$ $\begin{array}{r} 31 \\ \times 3 \\ \hline \end{array}$ $\begin{array}{r} 42 \\ \times 6 \\ \hline \end{array}$ $\begin{array}{r} 73 \\ \times 9 \\ \hline \end{array}$ <p>Practicing (2-Digit) × (1-Digit) ①</p> | Understand the relationship between accumulation of same number and multiplication. Get familiar with multiplication table and build the basis of multiplication. |
| 13 | <p>● All of the third grade in Jimmy's school are going on a field trip. If 28 students can ride in one bus, how many students can ride in 5 buses?</p> <p>Practicing (2-Digit) × (1-Digit) ②</p> | 100×9 $\begin{array}{r} 323 \\ \times 3 \\ \hline \end{array}$ $\begin{array}{r} 583 \\ \times 6 \\ \hline \end{array}$ <p>Practicing (3-Digit) × (1-Digit)</p> | $\begin{array}{r} 20 \\ \times 90 \\ \hline \end{array}$ 30×70 $\begin{array}{r} 67 \\ \times 54 \\ \hline \end{array}$ $\begin{array}{r} 85 \\ \times 28 \\ \hline \end{array}$ $\begin{array}{r} 99 \\ \times 44 \\ \hline \end{array}$ <p>Practicing (2-Digit) × (2-Digit)</p> | Based on the multiplication table, understand the calculation theory and method of (2-digit) × (1-digit), and practice to handle the renamed number by mental calculation. Complete the calculation of multiplication. |
| 14 | $18 \div 2$ $5 \overline{) 5}$ $6 \overline{) 54}$ <p>Practicing (2-Digit) ÷ (1-Digit)</p> | <p>● There are 19 wheels. If it takes 3 wheels to make one tricycle, how many tricycles can be made and how many wheels will be left over?</p> <p>Practicing (1-Digit) ÷ (1-Digit)</p> | $8 \overline{) 96}$ $7 \overline{) 39}$ $49 \div 6$ $76 \div 7$ $\square \times \square + \square$ $= \square$ <p>Practicing (2-Digit) ÷ (1-Digit)</p> | Get familiar with division table and establish the basics of division. It should be made to understand that remainders are always smaller than the divisor. |

| Level | Samples | | Summary | | | | | | | | |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-------|------|------|-----------------------|---------------|----------------|----------------|
| 15 | $\begin{array}{r} 9 \overline{) 439} \\ 574 \div 7 \end{array}$ $\begin{array}{r} 4 \overline{) 720} \\ 959 \div 4 \end{array}$ <p>Practicing (3-Digit) \div (1-Digit)</p> | $\begin{array}{r} 58 \overline{) 238} \\ 79 \overline{) 417} \end{array}$ <p>Practicing Division by 2-Digit Numbers</p> <p>Practicing Division by 2-Digit Numbers</p> <p>● If 4800 people want to visit Mars and the spaceship can carry 40 people on each trip, how many trips will it take to let everyone visit? ● Margaret's whole school of 5428 students is going on a trip. If 40 students fit on each bus, how many buses are needed for the trip?</p> | <p>Using a dummy portion, study division that has the divisor of 2 digits. Although the speed of calculation is important, make sure it is done correctly. Complete the written calculation of division.</p> | | | | | | | | |
| 16 | $\begin{array}{r} 45\text{cm} \quad 4\text{mm} \\ -29\text{cm} \quad 7\text{mm} \\ \hline \end{array}$ $5500\text{mL} = \square \text{ L } 500\text{mL}$ $49\text{k} \quad 90\text{g} = \square \text{ g}$ <p>Learning Units of Measurement I</p> | $25 - (14 + 7) \quad 6 \times 5 \div 3$ $(15 + 6) \div 3 \quad 6 \times 9 - 72 \div 8$ $6 \times 6 + 45 \div 3 - 20 \quad (80 - (5 + 4) \times 4) \div 4$ <p>Order of Operations</p> | $10000 \text{ seconds} = \square \text{ minutes } \square \text{ seconds}$ $= \square \text{ hours } \square \text{ minutes } \square \text{ seconds}$ $3 : 52 : 42 \quad 10 : 25 : 12$ $+ 7 : 33 : 29 \quad - 4 : 54 : 50$ <p>Learning Units of Measurement II</p> <p>Practice to carry out correct calculation of the four arithmetic operations in the given order using natural number. Complete the four arithmetical operations of natural number.</p> | | | | | | | | |
| 17 | <p>● Write each improper fraction as a mixed number or a natural number, and write each mixed number as an improper fraction.</p> $\frac{43}{4} \quad 5\frac{4}{11} \quad \frac{64}{8} \quad 9\frac{5}{7}$ <p>Comparing Fractions</p> | <p>● Find the area of each colored section.</p>  <p>Addition and Subtraction of Fractions with Same Denominators</p> <p>Learning Units of Measurement III</p> | <p>Understand the meaning of fraction and complete the addition and subtraction of fractions with the same denominator.</p> | | | | | | | | |
| 18 | $\begin{array}{r} 1.92 \\ + 2.32 \\ \hline \end{array}$ $\begin{array}{r} 3.81 \\ - 2.62 \\ \hline \end{array}$ $\begin{array}{r} 3.942 \\ + 5.7 \\ \hline \end{array}$ $\begin{array}{r} 4.9 \\ - 3.85 \\ \hline \end{array}$ $198 + 51$ $953 - 692$ $3625 + 0.7$ $8.6 - 2.44$ <p>Adding and Subtracting Decimals</p> | <p>● Circle each pair where the number on the left is a multiple of the number on the right.</p> <p>(9, 12) (16, 4) (48, 12)</p> <p>Multiples and Factors</p> | <p>● Reduce each fraction with 2, 5, or 7.</p> $\frac{8}{18} \quad \frac{15}{25} \quad \frac{14}{21} \quad \frac{9}{24}$ <p>● Reduce each fraction to the simplest form.</p> $\frac{7}{14} \quad \frac{6}{18} \quad \frac{21}{28} \quad \frac{18}{42}$ <p>Reduction ①</p> <p>Understand the meaning of decimal and get familiar with reduction of fraction based on multiple and factor.</p> | | | | | | | | |
| 19 | <p>● Reduce each fraction to the simplest form.</p> $\frac{16}{20} \quad \frac{32}{46} \quad \frac{28}{84} \quad \frac{23}{92}$ <p>Reduction ②</p> | $\frac{5}{8} + \frac{2}{3} \quad \frac{5}{12} + \frac{7}{10} \quad \frac{7}{12} - \frac{3}{16}$ $2\frac{7}{12} + 7\frac{8}{15} \quad 4\frac{5}{14} - 2\frac{5}{21}$ <p>Addition and Subtraction of Fractions with Different Denominator ①</p> | <p>● Jason, Judy, and Matt collected recyclable materials as shown in the table below. Answer the questions.</p> <table border="1" data-bbox="812 1134 1055 1197"> <thead> <tr> <th>Material</th> <th>Jason</th> <th>Judy</th> <th>Matt</th> </tr> </thead> <tbody> <tr> <td>Amount collected (kg)</td> <td>$\frac{1}{6}$</td> <td>$\frac{4}{15}$</td> <td>$\frac{7}{12}$</td> </tr> </tbody> </table> <p>Addition and Subtraction of Fractions with Different Denominator ②</p> <p>Complete the reduction of fraction and practice reduction of fractions to a common denominator sufficiently to practice addition and subtraction of fractions with different denominator.</p> | Material | Jason | Judy | Matt | Amount collected (kg) | $\frac{1}{6}$ | $\frac{4}{15}$ | $\frac{7}{12}$ |
| Material | Jason | Judy | Matt | | | | | | | | |
| Amount collected (kg) | $\frac{1}{6}$ | $\frac{4}{15}$ | $\frac{7}{12}$ | | | | | | | | |
| 20 | $\frac{1}{2} - (\frac{1}{4} - \frac{1}{5}) \quad 3\frac{1}{2} + \frac{3}{4} - \frac{3}{5}$ $\frac{2}{3} + (\frac{3}{4} - \frac{2}{5}) \quad 5\frac{2}{3} - 2\frac{5}{8} - 2\frac{2}{9}$ <p>Addition and Subtraction of Three Fractions</p> | $\frac{5}{12} \times 16 \quad 4\frac{3}{5} \times 1\frac{1}{5} \quad 14 \times 3\frac{3}{4}$ $3\frac{2}{3} \times 0.15 \quad \frac{11}{42} \times 3 \times 7 \quad 2\frac{5}{6} \times 12 \times \frac{1}{4}$ <p>Multiplying Fractions</p> | $\frac{3}{8} \div 5 \quad 9 \div 3\frac{2}{5} \quad 3\frac{4}{15} \div 2\frac{6}{25}$ $2.4 \div \frac{1}{8} \quad 4\frac{1}{5} \div 0.7 \quad 2\frac{1}{2} \div \frac{5}{8} \div 1\frac{5}{9}$ <p>Dividing Fractions</p> <p>Practice should be done so that the reduction of fraction can be carried out during the multiplication of fractions and division of fraction can be changed to multiplication for calculation. Complete addition, subtraction, multiplication and division of fraction.</p> | | | | | | | | |
| 21 | $\begin{array}{r} 0.2 \\ \times 54 \\ \hline \end{array}$ $\begin{array}{r} 3.124 \\ \times 23 \\ \hline \end{array}$ $\begin{array}{r} 0.52 \\ \times 0.21 \\ \hline \end{array}$ $138 \times 0.004 \quad 400 \times 0.0036$ <p>Multiplying Decimals</p> | $23.5 \div 1000 \quad 0.042 \div 6$ $37 \overline{) 699.3} \quad 56 \overline{) 21} \quad 1.23 \overline{) 5.289}$ <p>Dividing Decimals</p> | <p>● Find the comparing amounts.</p> <p>$\frac{1}{4}$ of 24 75% of 400</p> <p>1.05 of 500</p> <p>Ratios</p> <p>Understand that the multiplication and division of decimal numbers are as same as those of natural number and practice to find the decimal point correctly. Complete the four arithmetic operations of fraction and decimal number and practice proportion and ratio.</p> | | | | | | | | |
| 22 | $x - 13 = 25 \quad 75 \div x = 15$ $(x \div 4) + 8 = 15 \quad (x - 9) \div 4 = 7$ $(x + 2\frac{4}{7}) = 3\frac{1}{3} \quad (x \times 3.5) = 175$ $x + 2\frac{5}{7} \times 2.3 = 9\frac{1}{5} \quad x \div 1\frac{3}{7} + 1.7 = 5\frac{1}{2}$ <p>Equations</p> | <p>● Solve for x.</p> $4 : 7 = 2 : x \quad \frac{2}{3} : \frac{5}{7} = 3\frac{1}{2} : x$ $\frac{11}{5} : 0.63 = 6 : x$ <p>Equivalent Ratios</p> | <p>● Find the perimeter and area of the shaded section.</p>  <p>Circular Geometry</p> <p>Complete equation and practice proportion, continued proportions and proportional allotment.</p> | | | | | | | | |
| 23 | $3 + \frac{1}{2} \div \frac{5}{6} \quad (\frac{9}{10} - \frac{3}{4}) \times \frac{5}{4}$ $\frac{1}{3} \div \frac{8}{9} + \frac{5}{6} \div \frac{8}{9} \quad 0.5 \times \frac{7}{10} \div 1.4 + 2.4$ $6 - (5 - (\frac{3}{4} + \frac{1}{6}) \div 11)$ <p>Equations</p> | $10\text{km}^2 = \square \text{ha} = \square \text{dam}^2 = \square \text{m}^2$ $15000000\text{m}^2 = \square \text{dam}^2 = \square \text{ha} = \square \text{km}^2$ <p>Equations</p> | <p>● Find the surface area and volume.</p>  <p>Develop the ability to calculate fractions and complete the compound calculation of four arithmetical operations.</p> | | | | | | | | |

| Level | Samples | Summary |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 24 | <p>Find the prime factorizations of the following numbers.</p> <p>1 42 2 108</p> <p>Find the number of divisors for the following numbers.</p> <p>1 $2^3 \times 5^2$ 2 315</p> <p>Fill in the boxes and circle the correct law used.</p> <p>$(\frac{2}{3}) \times 4 + 6 \times (\frac{2}{3})$</p> <p>$(\frac{2}{3}) \times 4 + 6 \times (\frac{2}{3})$</p> <p>$(\frac{2}{3}) \times 4 + 6 \times (\frac{2}{3})$</p> <p>$(\frac{2}{3}) \times 4 + 6 \times (\frac{2}{3})$</p> <p>Commutative, Associative, Distributive law of multiplication</p> <p>Commutative, Associative, Distributive law of multiplication</p> <p>Commutative, Associative, Distributive law of multiplication</p> <p>Commutative, Associative, Distributive law of multiplication</p> | <p>Understand divisors, multiples, decimal fractions and composite numbers, and learn about division of prime factors. By learning the theory of sets and operations, understand functions of sets. Expand your concept about numbers from natural numbers to integers. By understanding addition and subtraction of positive numbers, learn how to solve addition and subtraction of rational numbers.</p> |
| 25 | <p>The figure has an area of S_{cm^2}. Find the following.</p> <p>Express the area S in terms of a, b, and h.</p> <p>If $a=5\text{cm}$, $b=7\text{cm}$, and $h=3\text{cm}$, what is the area of the figure?</p> <p>The following is solved by using the equality properties. Write the number of the equality property. (1)-(9), that was used.</p> <p>$2x-3=5$ $\frac{1}{2}x+3=1$</p> <p>$2x=5+3$ $\frac{1}{2}x+3-3=1-3$</p> <p>$2x=8$ $\frac{1}{2}x-2$</p> <p>$x=4$ $x=-6$</p> <p>Plot the following points on the coordinate plane.</p> <p>A(-1, 1)</p> <p>B(0, 3)</p> <p>C(-5, 4)</p> <p>D(2, -2)</p> | <p>Learn how to solve four arithmetic operations of rational numbers. Based on an understanding of the properties of equalities, learn how to solve linear equations. Mark coordinates on a perpendicular line, and learn the definition of a domain and codomain by understanding the concepts of equal or more, equal or less, above and below.</p> |
| 26 | <p>Look at the following graph and find the equation for the function.</p> <p>For the following figures, find the measure of $\angle x$.</p> <p>Find the surface area and volume of the following solid figures.</p> | <p>By understanding the concepts of functions, learn how to find the relationships of directly proportional and inversely proportional functions and draw graphs. Understand relative frequencies and cumulative frequencies. Understand positional relationships between lines and planes on the flat plane or in space. Understand congruence conditions of two triangles. Learn about triangles, circles and sectors and also learn how to find the surface area and volume of solid figures.</p> |
| 27 | <p>Simplify the following.</p> <p>$-4a+2a$</p> <p>$16x^2y^3+(-2xy)^2$</p> <p>$12a+5a^2$</p> <p>$\frac{5}{8}x^2y+\frac{10}{27}x^2y^3$</p> <p>$-18a^2b+6ab^2$</p> <p>$8a^2b+12ab^2+\frac{1}{3}ab^2$</p> <p>If $x=4$ in $4x-2y=12$, what is the value of y?</p> <p>The graph of $-4x-3y-5=0$ runs through two points, $A(2a, -1)$ and $B(4, b)$. What is the value of $a-b$?</p> <p>Solve the following.</p> <p>$x+y=3$</p> <p>$x+3y=7$</p> <p>$y=4x-3$</p> <p>$-8x+2y=6$</p> <p>$2x-5y=9$</p> <p>$-5x+4y=3$</p> <p>$x=2.5y+\frac{1}{4}$</p> <p>$-4x+7y=2$</p> | <p>Learn about approximate values. Understand the law of exponents and learn how to solve addition, subtraction, multiplication and division of monomials and polynomials. Learn how to solve linear equations and systems of equations containing two variables.</p> |
| 28 | <p>If the number of solutions to the system of equations $\begin{cases} 2x+7y=-3 \\ -3x-14y=-b \end{cases}$ is infinite, find the value of $a-b$.</p> <p>The parallelogram, $ABCD$, on the right has a base of 8cm ($AD=8\text{cm}$). Supposing its area is no more than 28cm^2, what is its maximum height?</p> <p>On the right is a graph of the linear function $y=kx-b$. Suppose this graph is parallel to the straight line given by $fx-4y+2=0$. Find the value of k.</p> | <p>Learn about systems of equations in which coefficients are decimal or fractional. Also learn about various forms of systems of equations. Understand the properties of inequalities and learn how to solve various forms of linear inequalities. Learn how to solve various systems of inequalities and applications. Understand the concept of linear functions, graphs, slopes and intercepts. Learn about probability by understanding the meaning of an event and possibilities.</p> |
| 29 | <p>From the diagram on the right, it can be proven that $\triangle ABD \cong \triangle ACD$. Fill in the boxes.</p> <p>Proof In $\triangle ABD$ and $\triangle ACD$,</p> <p>(Hypothesis) $\dots\dots\dots$ ①</p> <p>(Hypothesis) $\dots\dots\dots$ ②</p> <p>\angle is common to both triangles $\dots\dots\dots$ ③</p> <p>From ①, ②, and ③,</p> <p>$\triangle ABD \cong \triangle ACD$ (SAS Congruence)</p> <p>In the following diagrams, O is the circumcenter of $\triangle ABC$, and point I is the incenter of $\triangle ABC$. Find the value of m and x.</p> <p>In the following diagram, if point G is the centroid for $\triangle ABC$, find the value of x.</p> | <p>Learn about probabilities and statements. By learning about the properties of various triangles and squares, model and solve a variety of figure-related problems. By understanding the meaning of similar figures, draw similar figures and understand conditions of the similarity of triangles. By understanding the theorem for connecting the midpoints of a triangle, you can easily solve applications.</p> |
| 30 | <p>Given a square $OABC$ with an area of 5, if the point D is on the number line such that $OC=OD$, then find the coordinates of the point D.</p> <p>Rationalize the denominator of the following.</p> <p>$\frac{\sqrt{5}}{\sqrt{3}-\sqrt{2}}$ $\frac{\sqrt{3}-2}{2\sqrt{3}-1}$</p> <p>Factor the following.</p> <p>$2ax-4xy$ $-ab^2+4ac$</p> <p>$4x^2-12x+9$ $2x^2-18xy+36y^2$</p> <p>Factor the following.</p> <p>$2(x+y)+7(x+y)-4$ $(2x+1)^2-(x-3)^2$</p> <p>$(x-2y)(x-2y-4)-12$ $2xy-2x+y-1$</p> | <p>Based on an understanding of square roots, learn the concept of irrational and real numbers. Learn how to expand polynomials using the distributive law and product rule. By understanding factoring and perfect-square expressions, learn how to factor various equations. Get familiar with new forms of quadratic equations and learn how to solve them.</p> |
| 31 | <p>Suppose the graph of the quadratic function $y=a(x-p)^2+q$ is as shown on the right. Find the signs of a, p, and q.</p> <p>Find the maximum or minimum for the following functions.</p> <p>$y=5x-10x+5$ $y=-\frac{1}{2}x^2+3x-4$</p> <p>The quadratic function $y=ax^2+5ax-6b$ has the minimum value of 7 when $x=3$. Find the value of $\frac{b}{a}$.</p> <p>Find the length of the diagonal l in the following.</p> <p>A rectangle</p> <p>A square</p> | <p>Learn about the quadratic formula of quadratic equations and learn to find solutions to quadratic equations using the quadratic formula. Learn how to solve various quadratic equations in which coefficients are fractional or decimal. Understand properties of quadratic functions and learn how to solve various problems. Using the Pythagorean Theorem, learn how to find the length of segments, and area and volume of plane figures.</p> |
| 32 | <p>In the rectangular prism, find the shortest route that starts at point A, passes through the edge BC, and reaches point C.</p> <p>In the figure shown, circle O is an inscribed circle of $\triangle ABC$. What is the length of BQ?</p> <p>The elevation angle looking up from point A to point C, which is at the top of an apartment building, is 40°. If the distance from point A to point B is 100m, find the height of the apartment building. (tan $40^\circ \approx 0.84$)</p> | <p>Using the Pythagorean Theorem, learn how to solve various problems with plane and solid figures. Learn about arcs, chords and the positional relationship between two circles. Also, learn about inscribed, central angles, tangent lines and chords, and a circle and a proportion. Learn about the meaning of trigonometric ratios, trigonometric ratios of a complementary angle, and the relationship between these</p> |