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| **SYLLABUS OUTLINE FOR TERM 3**   * Conversation of length in kilometers to metres. * Conversation of length in metres to kilometres * Finding circumference of a circle given diameter. * Finding circumference of a circle given radius. * Finding the area of a square. * Finding the unknown side of a square given area. * Volume of prisms. * Finding capacity of a cuboid. * Finding volume of prism given capacity in litres. * Finding the unknown side given volume and two sides. * Line segment. * Constructing perpendicular lines. * Constructing a perpendicular line from a point. * Constructing parallel lines. * constructing angle 600 * constructing angle 900 * Bisecting of drawn angles * Constructing angle 300 * Constructing angle 450 * Polygons. * Drawing different polygons. * Construction of a regular triangle. * Construction of a regular quadrilateral. * Construction of a regular hexagon. * Nets of prisms. * Finding the unknown longest side of right angled triangle. * Finding the base and height using the Pythagoras theorem. * Constructing right angled triangle. * Quadrilaterals * Prisms * Definition and description of integers. * Addition of integers using a number line. * Addition of integers without using a number line. * Subtracting integers using a number line. * Subtracting integers without a number line. * Plotting integers on number line using arrows. * Giving the values of arrows. * Writing additional statement writing a subtractional statements. * solving word problems involving application of integers. * Mathematical phases. * Mathematical phrases. * Mathematical expression * Substitution * Equations * Equations involving division and multiplication. | | | | |
|  | **Date : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **TOPIC 1: LENGTH**  **LESSON 1:** Conversation of length in kilometers to metres   * Length is the distance between two fixe4d points. * The basic unit of length is metres.   **Steps taken**   * *Multiply the given length in km by 1000m.* * *The product obtained is the length in m.* | | | |
|  | **Example 1**  Change 43km into m.  1km = 1000m  = 4000 x 43  = 43000m | |  | **Example II**  Express 0.81km into m.  1km = 1000m  = 1000 x 0.81m  = 1000 x 0.81m  = 1000 x  **= 810m** |
|  | **LEARNER’S ACTIVITY** | | | |
| 1. | **Change the following length in km into metres** | | | |
| (a) | 0.45km | (b) | | 2.74km |
| (c) | 27km | (d) | | 143km |
| (e) | 64.5 | (f) | | 54km |
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|  | **Date : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **LESSON 2: Conversation of length in metres to kilometres**  **Steps taken**   * *Multiply the given length in M by km* * *Divide accurately.* * *The quotient obtained is length in km.* | | | | |
| **Example 1**  Change 405m into km  1m = km  = x 405km  = 0.405km | | **Example 2**  Express 49m into km.  1m = km  = x 49km  = 0.049km | | |
| **Example 3**  Express 4200m into km.  1m = km  = x 4200km  **= 4.2km** | | **Example 3**  Convert 23000m into km  1m = km  = x 23000km  **= 23km** | | |
| **LEARNER’S ACTIVITY** | | | | | |
| **Express the following length into kimetres.** | | | | | |
| (a) | 250m | (b) | | | 700m |
| (c) | 9000m | (d) | | 1200m | |
| (e) | 41m | (f) | | 48m | |
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| **Date : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **LESSON 3: Finding the circumference of a circle given the**  **Diameter**  Circumference is the distance round a circular object.  Circumference = pi x diameter  =  Circumference = 2 x pi x radius  = 2nr  Pi is the ratio of circumference to diameter  Pi = circumference  Diameter  The constant value of = or **3** or 3.14  Diameter is the longest distance through the centre of a circular object to the circumference.  Radius is half of diameter.  Radius = Diameter  2    **Steps taken**   * *Multiply the given diameter by or 3.14 where applicable.* * *The product obtained is the circumference.*   **Example 1:**  Find the circumference of a circle whose diameter is 28cm.  (use = )  Circumference =  = x 28cm  = 22 x 4cm  **= 88 cm.**  **Example II**  Find the circumference of a circle whose diameter is 20cm  Circumference =  = 3.14 x 20cm  = x 20cm  = cm  **= 62.8cm** | | | |
|  | | **LEARNER’S ACTIVITY** | |
| 1. | | Find the circumference of a circle whose diameter is 42cm2 | |
| 2. | | If the diameter of a circle is 21cm, find its circumference.  (Use = ) | |
| 3. | | The diameter of a circle is 49cm. Find its circumference.  (Use = ) | |
| 4. | | The diameter of a circle is 56cm. Find its circumference.  (Use = ) | |
| 5. | | The diameter of a bicycle wheel is 84cm. Calculate its circumference. (Use = ) | |
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| **RELATIONSHIP BETWEEN RADIUS AND DIAMETER**  Diameter = R + R  Or 2 x R  **Examples**  Find the diameter of a circle whose radius is, | | | | | | | |
| **Example 1**  3cm  D = R + R  = 3cm + 3cm  = 6cm | | | **Example 2**  2.5cm  D = R + R  = 2.5m  + 2.5m  5.0m  = 5m | | | **Example 3**  7½ dm  D = 2 x r  = 2 x 7½dm  = 2 x dm  = 15dm | |
| **ACTIVITY** | | | | | | | |
| 1. | Find the diameter of a circle whose radius is | | | | | | |
| (a) | 4cm | (b) | | 6.3m | (c) | | 9¼ dm |
| 2. | A circular garden has a radius of 5m. Calculate its diameter. | | | | | | |
| 3. | A circular pond has a radius of 3.25m. Find its diameter. | | | | | | |

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|  | | **Date : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **LESSON 4: Finding circumference of a circle when given**  **radius**  Radius is the line which runs from the centre to the circumference.  **Steps taken**   * State the formular which isr * Multiply the given radius by or 3.14 where applicable. * The product obtained is the circumference.   **Example 1**  Calculate the circumference of a circle whose radius is 7cm. (Use  Circumference = r  = 2 x x r  = 2 x x 7cm  = 44 x 1cm  = 44cm  **Example II**  Find the circumference of a circle with a radius of 10cm.  (use as 3.14)  Circumference = r  = 2 x 3.14 x 10cm  = 2 x x 10cm  = cm  = 62.8cm | | | | |
| **LEARNER’S ACTIVITY** | | | | | | |
| (a) | | **Find the circumference of the circle given radius.** | | | | |
| 1. | | 7cm | 2. | | | 14cm |
| 3. | | 28cm | 4. | | | 49cm |
| (b) | | Finding perimeter of sectors of a circle  **Semi circle**  P = ( x ) + D | | | | |
|  | | **Quadrant**  r P = ( x ) + D  r | | | | |
|  | | Sector  P = x ) + D  r  1200 | | | | |
|  | | **Examples**  **Find the perimeter of.** | | | | |
| 1. | | 7cm  P = ( x ) + D  11  P = x x 7) + 7  = 11 + 7  =  **18cm** | | 2. | D = 14dm + 14dm  28dm  14dm  P = x x 14dm) + 28dm  = 11 + 28  =  **39dm** | |
| **LEARNER’S ACTIVITY**  **Find the perimeter of the following shapes** | | | | | | |
| 1. | | 14cm | | 2. | 7m | |
| 3. | | 360  10cm | | 4. | 1200  7cm | |
| 5. | | 720 | | | | |
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|  | **Date : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **LESSON 5: Finding area of a circle**  ***Steps taken***   * *Multiply the given radius by or 3.14 where applicable.* * *Expand correctly then simplify.* * *Multiply to get product as area of the circle.*   **Example 1:**  Calculate the area of a circle whose radius is 7cm.  Area of a circle =  = x (72)sq.cm  = x 7cm x 7 sq.cm  = 22 x 7 sq.cm  **= 154 sq.cm**  **Example II**  Workout the area of a circle whose radius is 10m. (Use as 3.14)  Area of circle =  = 3.14 x 10 x 10 sq.m  = 314,00 sq.m  **= 314.00 sq.m** |
|  | **LEARNER’S ACTIVITY** |
| 1. | Calculate the area of a circle whose radius is 14cm.  (Use as ) |
| 2. | Workout the area of a circle whose radius is 28m. (Use as ) |
| 3. | Find the area of a circle whose radius is 35cm. (Take as ). |
| 4. | Calculate the area of a circle whose radius is 49cm.  (Take as ). |
| 5. | Find the area of a circle whose radius is 20dm. (Use as 3.14) |
| 6. | Calculate the area of a circle whose radius is 30cm.  (Use as 3.14) |
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|  | **Date : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **LESSON 6: AREA OF QUADRILATERALS**  Area of a rectangle  A = L x W  **Examples**   1. Find the area of a rectangle whose length is 8cm and width 5cm   A = 9cm x 5cm  = **40cm2** | | |
| **LEARNER’S ACTIVITY** | | | |
| 1. | Find the area of the rectangles below:- | | |
| (b) | 7cm  4cm | (b) | 9m  6m |
| 2. | A rectangular floor measures 20m by 15m. Calculate its area. | 3. | Calculate the area of a rectangle whose length is 9dm and width 7dm. |

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|  | **Date : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **Find length or width of a rectangle when area is given**  **Examples**  The area of the figure below is 24cm2. Calculate its width.  L x W = A  6cm x W = 24cm2  6w = 24  6 6  **W = 4cm**  w  6cm |
| **LEARNER’S ACTIVITY** | |
| 1 | The are of the figure below is 27cm2. Calculate its length.  3cm  L |
| 2. | Given that A = L x W, find w if A = 36cm2 and L = 9cm. |
| 3. | Calculate the width of a rectangular garden whose area is 100m2 and its width is 4m. |

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|  | P = 36cm  **Date : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **Find area of a rectangle when perimeter is given**  **Examples**  The perimeter of a rectangle is 36cm, its width is 4cm.   1. ***Find the length.***   ***(b) Calculate its area***  Area = L x W  14 x 4  66cm2  P = 36cm  4cm  L  P = 2L + 2W.  36 = 2L + (2 x 4)  36 = 2L + 8  36 - 8 = 2L + 8 – 8  28 = 2L  2 2  14 = L  **L = 14cm.** |
| **LEARNER’S ACTIVITY** | |
| 1. | Workout the area of these figures below given the perimeters.  P = 14cm  P = 16cm  w  5cm |
| 2. | 2m  L |
| 3. | P = 24m  4cm  L |
| 4. | P = 22cm  4cm  L |
| 5. | P = 26cm  6m  L |
| 6. | P = 42  13cm |

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|  | **Date : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **Finding area of a square when perimeter is given**  **Examples**  Find the area of a square whose perimeter is 24cm.  4S = P  4S = 24cm  4 4  S = 6cm.  A = S x S  = 6cm x 6cm  **= 36cm2** | | |
| **LEARNER’S ACTIVITY**  **Find the area of a square whose perimeter is** | | | |
| 1. | 20cm | 2. | 32cm |
| 3. | 40m | | |

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| **Date : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **LESSON 6: FINDING AREA OF A SQUARE**  **Property of a square**.   * A square has all sides equal. * A square has four right angles   ***Steps taken***   * *Give the formular* * *Substitute correctly.* * *Operate correctly.* * *Give the area with correct units.* | | | | | | | | |
| **Example 1:**  Find the area of a square whose side is 4cm.  Area = S2  = side x side  = 4cm x 4cm  = 16 sq.cm | | **Example II:**  Find the area of a square whose side is 2.4cm.  Area = S2  = side x side  = 2.4cm x 2.4cm  = cm x sq.cm  =  **= 5.76 sq.cm** | | | | | | |
| **LEARNER’S ACTIVITY** | | | | | | | | |
| 1. | Calculate the area of the square. | | | | | | | |
| (a) | 10cm | | | | (b) | | | 1.3cm |
| (c) | 1.4cm | | | (d) | | 11cm | | |
| (e) | 0.4m | | |  | | 6m | | |
| 2. | Calculate the area of a square whose side length is: | | | | | | | |
| (a) | 15cm | |  | | | | 18dm | |
| (b) | 12cm | | (e) | | | | 25dm | |
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| **Date : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **LESSON 7: FINDING THE UNKNOWN SIDE OF A SQUARE**  ***Steps taken***   * *Give the formular of the area of a square.* * *Substitute correctly.* * *Find the square root for both sides.* | | | | | |
| **Example 1:**  The area of a square is 144m2. Find the length of each side.  Area of square = 144m2  =  **S = 12m** | | | | | |
| **Example II**  Calculate the side length of each side, if the area of a square is 16dm2  Area of square = 16dm2  S = 16dm2  =  **S = 4dm** | | | | | |
| **LEARNER’S ACTIVITY** | | | | | |
| 1. | The area of a square garden is 100m2. Calculate the length of each side of the garden. | | 2. | | The area if a square is **2cm2. Find the length of each side** |
|  | ***Find the side length of a square, if the area of a square is*** | | | | |
| (a) | 121cm2 | (b) | | 169m2 | |
| (c) | 225m2 | (d) | | 400m2 | |
| (e) | 625cm2 | (f) | | 81dm2 | |

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| **1)**  **a)**  **c)**  **b)** | **ACTIVITY:**  **5 cm**  **X + 6 cm**  **2x cm**  Find the value of x  Find the value of x  Find the area  Find the area of the rectangle.  **d)**  **Finding sides, area and perimeter of a rectangle.**  **Example 1.**  Given the rectangle below;  **(2a)cm**  **16 cm**  **2x cm**  i) Find a  **3)**  2a + 6 = 16  2a + 6 – 6 = 16 – 6  2a = 10  c =  a = 5 cm  ii) Find the actual width.  = (2a) cm  =(2x5)cm  =10 cm  iii) Find the area of the figure.  PQRS is a rectangle.  (y+1)cm  (4y+3)cm  (2y+5)cm  **P**  **S**  **Q**  **R**  a) Find the value of y.  b) Find the width of the rectangle in cm.  c) Find the actual length of the rectangle in cm.  d) Area of inner rectangle.  **3)**  = L X W  = 8cm X 5cm  = 40cm2.  e) Area of the shaded part.  = L X W  = 8cm X 5cm.  = 40cm cm2.  **4)**  **Activity:**  Find the area of the shaded parts.  **11cm**  **9cm**  **4cm**  **8cm**  **1)**  **15cm**  **9cm**  **6cm**  **8cm**  **2)**  b)  **1)**  **8m**  **15cm**  Area = x b x h.  = x 15m x 8m  **4**  =1 x 15m x 4m  =24 cm2.  **2)**  Area = x b x h.  = x 15m x 8m  **4**  = 1 x 15m x 4m.  =60m2  c)  **4cm**  **9cm**  Area = x b x h  = x 4cm x 9cm.  **2**  = 18cm2. | **c)**  **b)**  **a)**  **2)** | **ABCD** is a rectangle.  **(X + 6) cm**    **(2x + 1) cm**  Find the value of x  Find the length and width of the rectangle.  Find the perimeter of the rectangle  iii) Work out the perimeter.  **Method 1**  P = add all sides  = 10cm + 16cm + 10cm + 16cm  = 26cm + 26cm  = 52cm.  **Method II**  P = 2(L + W)  = 2(16cm + 10cm)  = 2 x 26 cm  = 52 cm.  iv) Find its area.  A = L x W  = L x W  = 16cm x 10cm.  =160 cm2  The three sides of a rectangle in order are 2x, (x +1) , and (x+7)cm.  i) Find the value of x  ii) Find the actual length and width.  d) Find its area.  e) Work out its perimeter.  Finding area of shaded parts of rectangles.  Find the area of the shaded part.  **2cm**  **2cm**  **2cm**  **2cm**  **8cm**  a) Length of outer rectangle.  = (8 + 2 +2) cm.  =12cm.  b) Width of the outer rectangle.  = (5 + 2 + 2)cm  =9cm.  c) Area of the outer rectangle.  =L x W  =12cm x 9cm.  = 108cm2.  **3cm**  **3cm**  **3cm**  **3cm**  **5cm**  **4cm**  **1cm**  **2cm**  **3cm**  **2cm**  **5cm**  **16cm**  **10cm**  **4cm**  **Area of triangles.**  a)  **8cm**  **11cm**  **6cm**  Area = x b x h  = x 6cm x 4cm  = 24cm2.  **Activity**  **6cm**  **9cm**  **8cm**  **7cm** |

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| **Date : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **LESSON 8: FINDING VOLUME OF A CUBOID**  Finding Volume of a rectangular prism  Volume of a rectangular prism = base area x height  **Steps taken**   * *State the formular of volume of a cuboid* * *Substitute correctly.* * *Multiply to get product.* * *The product is the volume in cc or cm3* | | | |
| **Example 1:**  **Find the volume of the rectangular prism**  5cm  10cm  Volume = (base area) x height  = L x W x H  = (10cm x 8cm) x 5cm  = 80cm2 x 5cm  **= 400cm3** | | | |
| **Example: 2**  8cm  **Find the volume of box below**  9cm  7cm  10cm  Volume = L x W x H  = 10cm x 7cm x 9cm  = 70cm2 x 9cm  **= 630cm3** | | | |
|  | **LEARNER’S ACTIVITY** | | |
| 1. | ***Find the volume of each cuboid*** | | |
| (a) | 12cm  3cm  5cm | (b) | 8cm  4cm  15cm |
| (c) | 12cm  7cm  5cm | (d) | 6cm  11cm  4cm |
| 2. | A cuboid has a length 9cm, width 4cm and height 3cm. Find its volume | 3. | Find the volume of the box whose base area is 30cm2 and the height is 8cm. |

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| **Date : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **LESSON 9: FINDING CAPACITY OF A CUBOID**  ***Steps taken***   * Find the volume. * Multiply the volume by L * Divide accurately to obtain the quotient. * The quotient obtained is capacity in litres   **Example 1:**  A rectangular tank measures 40cm by 30cm by 10cm. Calculate its volume in litres.    40cm  30cm  10cm | | | | |
| **Method 1**  Volume in litres = volume  1000  = L x w x h  1000  = 40 x 30 x 10  1000  = 4 x 3 x 1  **= 12litres** | | | **Method II**  Volume = L x w x h  = 40cm x 30cm x 10cm  = 12,000cm2  1 cm = L  = x 12000L  **= 12 litres** | |
| **Example III**  4cm  5cm  8cm | | Volume = Length x Width x height  = 8cm x 4cm x 5cm  =  **160cm3**  1cm3 = L  = x 160L  =  **= 0.16Litres.** | | |
| **LEARNER’S ACTIVITY** | | | | |
| 1. | ***Calculate the capacity of the cuboid whose volume is:*** | | | |
| (a) | 3600cm3 | | (b) | 124cm3 |
| (c). | 24000cm3 | | (c) | 6400cm3 |
| 2. | **Workout the number of litres each cuboid will hold when full,** | | | |
| (a) | 5cm  8cm  12cm | | (b) | 30cm  15cm  10cm |

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| **Date : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **LESSON 10: FINDING VOLUME A PRISM GIVEN CAPACITY IN**  **LITRES**  ***Steps taken***   * Multiply the given capacity by 1000cm3. * The product got is volume in cm3. | | | | | |
| **Example 1:**  The cuboid below holds 42 litres. Find its volume in cm3. | | | | | |
|  | | **Solution**  1L = 1000cm3  = 42 x 1000cm3  = 42,000cm3 | | **Example**  The capacity of the tank is 0.155litres when full. Calculate its volume.  1L = 1000cm3  0.154 = x 1000cm3  **= 154cm3** | |
| **LEARNER’S ACTIVITY** | | | | | |
| 1. | **Calculate the volume of a cuboid which holds.** | | | | |
| (a) | 3 litres when full. | | (b) | | 48 litres when full. |
| (c) | 64 litres when full. | | (d) | | 264 litres when full. |
| (e) | of 24 | | (f) | | of 32 litres |
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| **Date : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **LESSON 11: FINDING UNKNOWN SIDE GIVEN ANY TWO**  **SIDES AND VOLUME OF A CUBOID.**  **Steps taken**   * Write the formular. * Form the equation and solve. * The value obtained is the length of the unknown side. | | | |
| **Example 1:** Find the value of x, if the volume of a cuboid is 210cm3  Volume of cuboid = 210cm3  *x*  10cm x 3cm x ***x*** = 210cm3  *3cm*  *10cm*  x =  **x = 7cm** | | | |
| **Example 2:** Calculate the value of y given the volume of a cuboid is  480cm3  Volume = 480cm3  *6cm*  *8cm*  y x 6 x 8 = 480cm3  *y*  y =  **x = 10cm** | | | |
|  | **LEARNER’S ACTIVITY** | | |
| **1.** | ***Workout the value of r if the volume of a cuboid is 240cm3*** | | |
| (a) | *3cm*  *8cm*  *r* | (b)  *r*  *6cm* | *8cm* |
| 2. | **Calculate the value of x given the volume of 720cc** | | |
| (a) | *4cm*  *9cm*  *x* | (b)  *10cm* | *x*  *12cm* |
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|  | **Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **FINDING VOLUME OF CYLINDERS** | | |
| 1. | Find the volume of the cylinders  10cm  7cm  10cm  Volume = Area of circle x height  = x h  = x 7 x 7 x 10  = 22 x 70  **= 1540cm3** | 2. | The diameter of a tin is 14cm. if its height is 60cm, calculate its volume.  1  V = x h  7  2  = x x x 60  1  = 22 x 420  **= 9240cm3**  1 |
|  | **LEARNER’S ACTIVITY** | | |
| 1. | Calculate the volume of the following cylinders below  7cm  40cm | 3. | Find the volume of the cylinder whose radius is 21cm and height 14cm. |
| 2. | 14cm  20cm | 4. | The base diameter of a time is 14cm and its height is 30cm. Calculate the volume. |
| 5. | Calculate the volume of the cylinder with radius 14cm and height 10cm. | | |
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|  | **Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **CAPACITY OF CONTAINERS**  Capacity is the measure of liquids. They are measured in litres.  **Examples** | | | | |
| (a) | How many 5 litre containers are in 40 litre containers?  8  No. of containers =  1  = 8 containers | | (b) | | How many 4 litre containers fill a 100 litre container?  25  No. of containers =  1  = 25 containers |
| (c) | How many ¼ litre container can be got from 40 litre container?  40 ÷  40 x  **160 containers.** | | | | |
| **Calculating capacity in litres.** | | | | | |
| 1.  200cm  14cm | Find the capacity of 6 tins below  V = x L  x 14 x 14 x 200  44 x 2800  123200cm3  Capacity =  =  **= 123.2 litres** | | 2. | | Find the capacity of the tin below in L (1cm3 = 1ml)  (1000cm3  = 1000ml)  20cm  70cm  Volume = x L  x 70 x 70 x 20  22 x 700 x 20  15400 x 20  Capacity =  **= 308 litres** |
|  | **LEARNERS ACTIVITY** | | | | |
| 1 | **Find the capacity of these containers** | | | | |
| (a)  400cm  14cm  10cm  70cm |  | (b) | |  | |
| (c)  200cm  70cm  360cm  7cm |  | (d) | | 140cm  80cm | |
| (e) |  | | | | |

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| 1. | Angles which add up 1800  M  300  M + 300 = 1800  M + 300 - 300 = 1800 - 300  **M = 1500** | | 2. | | What is the supplement of angle 1520  Let the supplement  1520  K  K + 1520  = 1800  K + 1520 – 1520  = 1800  **K = 0280** |
|  | **LEARNER’S ACTIVITY** | | | | |
| 1 | **What is the supplement of the following angles.** | | | | |
| (a) | 400 | (b) | | 820 | |
| (c) | 1100 | (d) | | 1120 | |
| (e) | 580 | (f) | | 480 | |
| (g) | 1420 | | | | |
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|  | **Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **NAMING COMPLEMENTARY ANGLES**  Angles which add up to 900. | | | | |
| 1. | Find the complementary angle to 200  200  K  K + 200 = 900  K + 200 - 200 = 900 - 200  **K = 700** | | 2. | | Find the value of y.    580  y  y + 580  = 900  y + 580 – 580  = 900  **y = 320** |
| **LEARNER’S ACTIVITY** | | | | | |
| **Find the value of the unknown.** | | | | | |
| 1 | *x*  400 | 2. | | *x*  470 | |
| 3. | 640  *y* | 4. | | 200  240  K  470 | |
| **5.** | **Find the complementary of those angles** | | | | |
| (a) | 360 | (b) | | 540 | |
| (c) | 600 | (d) | | 810 | |
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| 1. | **Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **VERTICALLY OPPOSITE ANGLES**  These angles lie vertically to each other. They are equal angles.  d  c  b  a  ∠ a = ∠ c  ∠ b = ∠ d | | |
| 2. | Find the size of angle marked p.  **∠** P = 1320 (Vertically opposite angles)  1320  m  q  ∠ q + 1320 = 1800(Supplementary angles)  p  q +1320 - 1320 = 1800 - 1320  **q = 480** | | |
| **Vertically opposite angles and supplementary angles** | | | |
| 1. | 300  y  z  *x*  Find the size of :-  (i) ∠ x | (ii) | ∠ z |
|  | (iii) ∠ y | | |
| 2. | q  T  y  1400  Find the angles with letters. | | |
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|  | **Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **ANGLES FORMED BY PARALLEL LINES**  Alternate interior and exterior lines.  Alternate angles are equal angles.  M  a  b  T  ∠ a and ∠ b are alternate interior angles. they are equal angles.  ∠ T and ∠ m are alternate exterior angle. They are equal angles. | | | | |
| 1. | **Examples**  400  x + 200  *x* + 200 = 400 (Alternate angles)  *x* + 200 – 200 = 400 - 200  **x = 200** | | | | |
| 2. | 1200  k + 200  *k* + 200 = 1200 (Alternate angles)  *k* + 200 – 200 = 1200 - 200  **k = 1000** | | | | |
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|  | **Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **IDENTIFYING PROPERTIES OF QUADRILATERALS** | | | | |
| 1. | **Square**  **Properties**   * All sides are equal. * Opposite sides are equal and parallel. * Angles are 900 * Diagonals are equal. * The diagonal bisect each other at right angles. | 4. | | **Rhombus**   * All sides are equal and parallel to each other. * Opposite angles are equal. * Diagonals are not equal but they bisect each other at right angles. | |
| 2. | **Rectangles**  **Properties**   * Opposite sides are equal and parallels. * Angles are 900 * Diagonals are equal. * It has 2 lines of symmetry. | 5. | | **Trapezium**   * Two of the sides are parallel but not equal. * In an isosceles trapezium, the base angles are equal and in a scalene trapezium the base angles are of different size. * Diagonal are equal. | |
| 3. | **Parallegram**   * Opposite sides are equal and parallel. * Opposite angles are equal. * Diagonals are not equal. * Diagonals bisect each other. | | | | |
| **Applying angle properties of quadrilateral** | | | | | |
| 1. | The angle sum of quadrilaterals is 3600  720  y  800  1140  y + (800 +1100 + 720) = 3600  y + 2620 - 2520 = 3600 - 2620  **y = 0980** | | 2. | | 500  1200  1100  P  P +(1200 + 1100 + 500) = 3600  P + 2800  - 2800 = 3600 - 2800  **P = 0800** |
|  | **TRIANGLES**  ***Applying the angle sums of interior angle of a triangle.*** | | | | |
| 1. | Find the size of angle x  400  *x*  x + (400  + 900) = 1800  x + 1300 - 1300 = 1800 - 1300  **x = 500** | | 2. | | Find the size of m.  540  620  m  x + (540  + 620) = 1800  x + 1160 - 1160 = 1800 - 1160  **x = 640** |
|  | **LEARNER’S ACTIVITY**  **Work out the unknown angles.** | | | | |
| 1. | *x*  620  700 | | 2. | | *x*0  *2x*0  *3x*0 |
| 3. | 820  k | | 4. | | 1120  x  400 |
| 5. | *x* +300  *x* + 100  *x* + 200 | | 6. | | 700  700  y |
| 7. | 600  2k  400 | | 8. | | 520  480  m |
| **Find the volume of the unknown angles**  y  820  780  700 | | | | | |
| 1. | 1100  1100  280  y | | 2. | |  |
| 3. | 1100  400  y  1300 | | 4. | | 1300  1200  400  m |
| 5. | 1100  1200  P  500 | | 6. | | 1200  400  m  1220 |

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|  | **Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **THEME: GEOMETRY**  **LESSON 12: LINE SEGMENT**  Is a point of a line between two points.  ***Steps taken***   * *Use a ruler and a pair of compasses.* * *Open the pair of compasses to the two marked point on the segments.* * *Transfer the pair of compasses to ruler and take the reading.*   **Example**  Draw a line segment AB of 4cm.  4.4cm  **A**  **B**  **Example II:** Draw a line segment PQ of 6cm.  6cm  **P**  **Q**  **Example III:**  Draw a line segment MN of length 5cm.  **N**  **M**  5cm | | |
|  | **LEARNER’S ACTIVITY** | | |
| **1.** | ***Draw line segment of length.*** | | |
| (a) | PQ = 3cm | (b) | MN 8.7cm |
| (c) | RS = 9cm | (d) | AB = 7.5cm |
| (e) | OR = 10cm | (f) | EF = 7.2cm |

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| **Example**  **Construct a perpendicular line through a line segment AB.**  **B**  **A** | | | |
| **Example II** | | | |
|  | **LEARNER’S ACTIVITY** | | |
| **1.** | ***Construct perpendicular line through the line segments.*** | | |
| (a) | X  Y | (b) | Q  R |
| (c) | A  B | | |
| (e) |  | | |
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| **Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **LESSON 14: CONSTRUCTING A PERPENDICULAR LINE AT A**  **POINT**  **Steps taken**   1. Place the pointer of the pair of compasses at the given point. 2. Increase the radius of the pair of compasses and let any two points on the line. 3. Place the pointer of the pair of compasses at either points created and mark off arcs below and above to intersect. 4. Join the intersect points to the centre with a ruler. | | |
| **Example 1:**  **Construct a perpendicular line at point A.** | | |
| **Example II: Construct a perpendicular line at point Y.** | | |
|  | **LEARNER’S ACTIVITY** | |
| **1.** | ***Construct perpendicular line at point A.*** | |
| (a) | A  • | (b)  •  A |
| (c) | •  A | (d)  A  • |
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| **Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **LESSON 15: CONSTRUCTION OF PARALLEL LINES**   * Parallel lines are set of lines which run in same direction and have same distance apart / separated by same distance apart. * Parallel lines will never meet.   **Steps taken**   * *Place a set square along the line.* * *Hold the ruler firmly in position of the square.* * *Side smoothly along it.* * *Draw the parallel line.* | | | |
| **Examples:** Construct parallel line to AB  **B**  **A** | | | |
|  | **LEARNER’S ACTIVITY** | | |
| **1.** | ***Draw parallel line to XY*** | | |
| (a) | XY  Y  X  Y  X | (b) | Y  X |
| (c) | X  Y | | |
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| **Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **LESSON 16: CONSTRUCTING ANGLE 600**  There are two base angles.  Angle of 600.  Angle of 900.  ***Steps taken when constructing base angle 600***   * Draw a straight line. * Mark a point on the straight (centre) * Choose reasonable radius. * Place the pointer at the centre. * Mark an arc either on the right or left then above. * Mark the arc below. * Join the two points using ruler to the centre. | |
| **Example 1:**  **Construct an angle of 600.** | |
|  | **LEARNER’S ACTIVITY** |
| 1. | Using a ruler, a pencil and a pair of compasses only, construct an angle of 600 |
| 2. | Use a ruler and a pencil and a pair of compasses only, construct an angle of 600. |
| 3. | Construct more angles of 600 for practice. |

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|  | **Date : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **LESSON 17: CONSTRUCTING ANGLE 900**  **Steps taken**   1. *Draw a straight line.* 2. *Mark off a centre on the straight line.* 3. *Draw a semi circle.* 4. *Mark off two arcs on the semi-circle.* 5. *Place the pair of compass at the point of intersection and mark off arcs above the semi circle.* 6. *Draw a straight line to the centre.* |
| 1. | **Examples:**  Construct an angle of 900 |
|  | **LEARNER’S ACTIVITY** |
| 1. | Construct an angle of 900 |
| 2. | Using a ruler, a pencil and a pair of compasses only, construct an angle of 900 |
| 3. | Construct more angles of 900 for practice. |

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| **Date : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **LESSON 18: BISECTING DRAWN ANGLES**  It means to divide an angle into two equal angles.  ***Steps taken***   * Select a reasonable radius on the pair of compasses. * Place the pointer at centre B and draw arcs to cut both lines AB and BC. * Place the pointer at the intersection point of the arcs that have been cut in it above and create intersecting arcs of intersect. | | | |
| **Example**  Bisect angle ABC using a ruler and a pair of compasses.  C  A  B | | | |
| **LEARNER’S ACTIVITY** | | | |
| 1. | **Bisect the following drawn angles.** | | |
| (a) | Z  Y  X | | |
| (b) | Q  O  P | | |
| (c) | B  C  A | (d) | T  M  N |
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| **Date : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **LESSON 19: CONSTRUCTING ANGLE 300**  ***Steps taken***   * Follow through the steps of constructing angle of 600 * Bisect the angle 600 * Label angle 300   **Example 1**  Construct angle 300 in the space provided.  **Method 1** | |
| **LEARNER’S ACTIVITY** | |
| 1(a) | Construct angle 600 |
| (b) | Bisect the angle above. |
|  | Construct angle 300 |
| 3/ | Construct more angles of 300 for practice, |
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| **Date : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **LESSON 20: CONSTRUCTING ANGLE 450.**  ***Steps taken***   * Follow the steps for constructing 900 * Bisect the angle 900 * Label angle 450 | |
| **Example 1:**  Construct angle 450  **Method 1:** | |
| **LEARNER’S ACTIVITY** | |
| 1. | *Construct an angle of 450 in the space provided.* |
| 2.(a) | *Construct an angle of 900* |
| (b) | *Construct more angles of 450 for practice.* |
| *(c)* | *Bisect the angle above.* |

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|  | **Date : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **LESSON 21: LESSON 21: POLYGON**  Polygon: is a closed sided shape.  Polygons are classified into two:-   1. Regular polygon 2. Irregular polygon   Regular polygon is a polygon with all sides and angles are equal. Irregular polygon is a polygon with sides and angles having different sizes.  **Polygons are named according to number of sides.**   |  |  | | --- | --- | | Names of polygon | No. of sides | | Triangle | 3 sides | | Quadrilateral | 4 sides | | Pentagon | 5 sides | | Hexagon | 6 sides | | Heptagon / septagon | 7 sides | | Octagon | 8 sides | | Nonagon | 9 sides | | Decagon | 10 sides | | Nuo-decagon | 11 sides | | Duo-decagon | 12 sides | |
| **LEARNER’S ACTIVITY** | |
| 1. | In a sentence give the meaning of a polygon. |
| 2. | A four sided polygon is called |
| 3. | A seven sided polygon is known as |
| 4. | How many sides has:-  (a) Decagon? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  (b) Nuo decagon? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  (c) Nonagon? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  (d) Triangle? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

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| **Date : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **LESSON 22: DRAWING DIFFERENT POLYGONS**  ***Steps taken***   * Identify the number of sides a polygon stated has. * Use a ruler and a pencil to draw a polygon given.  |  |  | | --- | --- | | **POLYGON** | **SHAPE** | | Triangle |  | | Quadrilateral |  | | Pentagon |  | | Hexagon |  | | Octagon |  | | |
| **LEARNER’S ACTIVITY** | |
| 1. | Name the following polygon.  (a)  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_   1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 2. | Draw any pentagon in the space provided. |
| 3. | Draw a Heptagon |

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|  | **Date : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **LESSON 23: CONSTRUCTING A REGULAR TRIANGLE**   * An equilateral triangle is a regular triangle. * An equilateral triangle has all sides and angles equal. * 600 is the interior angle size for each angle.   ***Steps taken***   * Draw a straight line using a pencil and a ruler. * Measure the given length. * Mark off the arcs for line segment. * Place the pointer at either side with same distance to create a point above the line segment. * Join the points to form the triangle. * Indicate the properties of the triangle. * Consider other method in construction of equilateral triangle. |
|  | **Example 1**  Using a ruler, a pencil and a pair of compasses, construct an equilateral triangle of side 6cm. |
|  | **LEARNER’S ACTIVITY** |
| (a) | Using a ruler, a pencil and a pair of compasses only construct a regular triangle (equilateral triangle of sides given)  7cm |
| (b) | 5cm |
| (c) | 4cm |
| (d) | Construction of triangle whose sides are not equal.  Construct a triangle ABC where AB = 7cm, BC = 5cm, and AC = 6cm |
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|  | **Date : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **LESSON 24: CONSTRUCTING A REGULAR QUADRILATERAL**   * A square is an example of a regular quadrilateral. * It has four sides and angles which are equal. * 900 is the angle size of each interior angle.   ***Steps taken***   * Draw a sketch and indicate all the properties. * Use the sketch and construct an accurate square basing on angle of 900 at each corner |
|  | **Example1:**  With help of a ruler, pencil and a pair of compasses only construct a square ABCD of side 4cm.  sketch  C D  A B |
|  | **LEARNER’S ACTIVITY** |
| (a) | Use a ruler, pencil and a pair of compasses only construct at a square of sides.  5cm |
| (b) | 6cm |
| (c) | 3cm |
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|  | **Date : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **LESSON 25: CONSTRUCTING A REGULAR HEXAGON**  A regular hexagon is a six sided polygon.  600 is the centre angle of a regular hexagon.  600 is the interior angle of a regular hexagon.  1200 is the exterior angle of a regular hexagon.  ***Steps taken to construct a regular hexagon***   1. Draw a straight line. 2. Measure the given radius. 3. Draw a circle of the given radius (from the centre of the straight line) 4. Obtain the centre angle by dividing 3600 by the number of sides which helps us to get the length of the sides of the hexagon. 5. Measure angle 600 and draw it at the centre. 6. Join a straight line from the centre to the circumference. 7. Copy the angle. 8. Mark off the similar angle on the circumference. 9. Join sides accurately. |
| (a) | **Example 1**  Construct a regular hexagon of radius 2.5cm.  Centre angle = 360  6  = 600 |
|  | **LEARNER’S ACTIVITY** |
| 1. | Construct a regular hexagon of radius 3cm. |
| 2. | Construct a regular hexagon of diameter 4cm. |
| 3 | Construct a regular hexagon of radius 2cm. |

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|  | **Date : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **LESSON 26: NETS OF PRISMS**  ***Steps taken***   * Identify the given prism. * Identify the number faces it has. * Develop the net according to their number of faces it has.  |  |  | | --- | --- | | **PRISM** | **NET** | | CUBE |  | | CUBOID |  | | TRIANGULAR PRISM |  | | CYLINDER |  | |
|  | **LEARNER’S ACTIVITY** |
|  | What figure can be obtained from the net shown  (a) (b) |
|  | (c) (d) |
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| c  **Date : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **LESSON 27: FINDING THE UNKNOWN LONGEST SIDE OF A**  **RIGHT ANGLED TRIANGLE USING**  **PYTHAGORAS THEOREM**  Note: In any right angled triangle, the area of the square drawn on the hypotenuse (longest side) is equal to the total area of the squares drawn on the other two sides.  **Example 1:** Study the three squares drawn to form a right angled triangle.  Square A + square B = square C  b  + =    9sq + 16 = 25sq units  a  25 sq = 25sq units  Therefore a2 + b2  = c2  32 + 42 = 52  (3 x 3) + (4 x 4) = (5 x 5)  9 + 16 = 25  25 = 25 | | | |
| **PROOF OF RULES**  Area of  square b = s2  = 42  = (4 x 4)  = 16 square units  Area of  square c = s2  = 52  = (5 x 5)  = 25 square units  C2  = a2 + b2  25 = 9 + 16  25 = 25  b2 = c2 -92  16 = 25 – 9  16 = 16  a2 = c2 - b2  32  = 52 - 42  q = 25 - 16  q = 9 | | | |
| **Rules extended to find unknown are:-**   1. c2 = a2 + b2 2. b2 = c2 - a2 3. a2  = c2 - b2   **Finding unknown length (hypotenuse)**  (We use c2 = a2 + b2)  **Steps taken**   * *State the rule c2 = a2 + b2* * *Substitute the value of a and b correctly.* * *Find the product of a2 and b2* * *Add the product.* * *Find the square root of the sum.* * *The value of obtained is the length of Hypotenuse)*   **Example 2: Find the value of x.**  6m  x  8m  *c2 = a2 + b2*  x2 = 62 + 82  x2 = 36 + 64    **x = 10m** | | | |
| **Example 3:** Calculate the length of diagonal of the rectangle drawn.  *c2 = a2 + b2*  5cm  c2 = 122 + 52  c2 = 144 + 25    **c = 13m** | | | |
|  | **LEARNER’S ACTIVITY** | | |
| **1.** | ***Find the length of diagonal of the rectangle below.*** | | |
| (a) | 9cm  12cm | | |
| 2. | ***Calculate the length of unknown sides of the triangle drawn.*** | | |
| (a) | 6cm | (b) | 4cm  3cm  *x* |
|  | 15cm  20cm  r |  | 5dm  2cm  m |

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| **Date : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **LESSON 28: FINDING THE BASE AND HEIGHT USING THE**  **PYTHAGORAS THEOREM**  ***Steps taken***   * Give the rule of difference either a2 = c2 - b or b2 = c2 - a2 * Find the products of the squares. * Get the difference of the products. * Find the square root of the difference. | |
| **Example 1:** Find the length of x  r2 = 102 - 62  r  6cm  10cm  r2 = 100 - 36  r2 = 64    **r = 8cm** | |
| **Example 2**: Find the value of y.  y2 = 132 - 122  13dm  r  12dm  y2 = 169 - 144  y2 = 25    **y = 5dm** | |
|  | **LEARNER’S ACTIVITY** |
| 1. | **Find the value of x**  15cm  x |
| 2. | -Calculate the length of PQ  25m  15m  Q  P  R |
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| 4cm  C  B  A  3cm | **Date : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **LESSON 29: CONSTRUCTION OF RIGHT ANGLED TRIANGLE**  ***Steps taken***   * Develop a sketch and label angle 900 * Use a sketch and construct an accurate right angled triangle.   **Sketch Accurate** |
|  | **LEARNER’S ACTIVITY** |
| 1(a) | Construct a right angled triangle PQR in which angle Q is 900, PQ = 6cm and QR = 8cm |
| (b) | Measure PR |

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|  | **Date : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **LESSON 30: QUADRILATERALS**  Quadrilaterals are four sided polygons.  ***Examples of Quadrilaterals.***   * Rectangle * Square * Trapezium * Kite * Rhombus * Parallelogram   ***Classification of Quadrilaterals.***  Polygons are classified by properties of;   * Angles * Sides * Diagonals. * Lines of folding symmetry.   ***General properties of quadrilaterals***   * Have four sides * Have four interior angles * 3600 is the interior angle sum. * They have two diagonals. * Have 1 face. |
|  | **LEARNER’S ACTIVITY** |
| 1. | *Give the number of sides and diagonals the quadrilateral has.* |
|  | |  |  |  | | --- | --- | --- | | **Quadrilateral** | **Sides** | **Diagonals** | | Square |  |  | | Rectangle |  |  | | Rhombus |  |  | | Kite |  |  | | Trapezium |  |  | | Parallelogram |  |  | |
| 2. | *State the properties of the Quadrilateral given.* |
|  | |  |  | | --- | --- | | Square |  | | Rectangle |  | | Rhombus |  | | Parallelogram |  | | Kite |  | |
| 3, | How many lines of folding symmetry has   1. Square \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2. Rhombus \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 3. Kite \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 4. Rectangle \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 5. Parallelogram\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

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| **Date : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **LESSON 31: PRISM**  Is a polyhedron which has two congruent faces called bases that are parallel.  A polyhedron is a figure formed of polygonal parts of planes called faces, that enclosed a region of space.   * Prism are named according to their bases. | | |
| ***Cube***  face  vertex  face  edge   1. 6 faces 2. 8 vertices 3. 12 edges | | ***Cuboid***  vertex    edge   1. 6 faces 2. 8 vertices 3. 12 edges |
|  | ***Triangular prism***  face  edge  vertex   1. 5 faces 2. 6 vertices 3. 9 edges | |
|  | ***Cylinder*** | |
|  | **LEARNER’S ACTIVITY** | |
| *Name the solid figures and give their number of faces, vertices and edges.* | | |
| |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | Solid figure | No. of faces | No. of vertices | No. of edges | | (a) |  | \_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_\_ | | (b) |  | \_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_\_ | | (c) |  | \_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_\_ | | (d) |  | \_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_\_ | | | |
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| **Date : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **THEME: NUMERACY**  **LESSON 32: DEFINITION AND DESCRIPTION OF INTEGERS**   * Integers are negative numbers, positive numbers and zero. * Zero is neither a negative integer nor positive integer. * Negative integers are written with a minus sign.   (+) positive integers are written with plus sign or without  (-) means negative.  Examples of positive integers are:  -1, +2, +3 …….  **Note:** Positive numbers can also be written without a sign. e.g. 2, 14, 17…  Examples of negative integers  -1, -2, -3, …… | |
|  | **LEARNER’S ACTIVITY** |
| 1. | What are integers? |
| 2. | Write any four examples of positive integers. |
| 3. | Write down any six examples of negative integers. |
| 4. | Which integer is referred to as neutral? |
| 5. | List the integers in between -3 and +5 on the number line. |
| 6. | Which integer is on the left hand side of “o” on the number line? |
| 7. | Which integers are on the right hand side of zero on the number line? |

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| **Date : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **LESSON 33: ADDITION OF INTEGERS USING A NUMBER LINE**  **Note:**   * The addition operation means face the direction of positive. * Positive integers are forwarded movements. They are also movements on your right from the point stated as origin. * Negative integers are backward movements. * They are also movements on your left from the point stated as origin.   **Steps taken**   * *Draw a number line.* * *Make correct movements according to the given question.* * *Give the final site as your out come* | |
| +3  **Examples:**  Add: +3 + +4 using a numberline.  (+4)  -4 -3 -2 -1 0 +1 +2 +3 + 4 +5 + 6 +7 +8 +9  +3  +3    +3 + + 4 = +7 | |
| Example II: Workout -5 + +4 using a number line.  -6 -5 -4 -3 -2 -1 0 +1 +2 +3 +4 +5 +6 +7  +4  5    **∴** -5 + +4) = -1 | |
| Example III: Add +5 + -5 using a number line.  -4 -3 -2 -1 0 +1 +2 +3 + 4 +5 + 6 +7 +8 +9  +(-5)    +5  +5 + -5 = 0 | |
| **LEARNER’S ACTIVITY** | |
| 1. | Simplify the following using a number line |
| (a) | -7 + +2 = |
| (b) | -4 + -2 |
| (c) | +2 + -6 |
| (d) | -4 + +7 |
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|  | **Date : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **LESSON 34: ADDING INTEGERS WITHOUT USING A**  **NUMBERLINE**  ***Steps taken***   * Apply the rule of multiplication where applicable.   **Note:**   * Product of a positive and negative integer is a negative integer. * The product of a positive and positive integer is a positive integer. * The product of a negative and negative is a positive integer.  |  |  | | --- | --- | | Positive | (+ + + + + + +) (+ + + +) | | Negative |  |   **Example 1:**  Add: +4 + +7  +4 + +7 = 11 |
|  | **Example II:**   |  |  | | --- | --- | | Positive | + + + + + + + + + | | Negative | - - - - |   Work out: -4 + +9  -4 + 9 = +5 |
|  | **Example III:**   |  |  | | --- | --- | | Positive | + | | Negative | - - - / - - - - |   Simplify: -3 + -4  -3 - 4 |
|  | **LEARNER’S ACTIVITY** |
| (a) | -4 + +9 |
| (b) | +5 + -7 |
| (c) | +2 + -8 |
| (d) | -3 + -5 |
| (e) | +3 + +4 |
| (f) | +5 + +6 |
| (g) | -4 + +4 |
| (h) | +13+ +10 |
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|  | **Date : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **LESSON 35: SUBTRACTING INTEGERS USING A NUMBER LINE**   * The subtraction operation means face the direction of negative.   ***Steps taken***   * *Draw a number line.* * *Make correct movements according to the given question.* * *Give the final steps as your outcome* |
| (a) | **Example 1:**  +7  Subtract +7 - +4 using a numberline.  -(+4)  -6 -5 -4 -3 -2 -1 0 +1 +2 +3 +4 +5 +6 +7  +3    **+7 - +4 = +3** |
| (b) | **Example II:**  Workout -8 - +4 using a numberline  -(+4)  -8  -13 -12 -11 -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0  -12  **∴ -8 - +4 = -12** |
|  | **LEARNER’S ACTIVITY** |
| 1, | Subtract using a number line |
| (a) | +6 - +4 |
| (b) | +7 - +6 |
| (c) | +4 - +5 |
| (d) | +4 - +4 |
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|  | **Date : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **LESSON 36: SUBTRACTION OF INTEGERS WITHOUT USING**  **A NUMBER LINE**  Note: Apply multiplier rule if applicable.   |  |  | | --- | --- | | +ve |  | | -ve | - - - / - - - - - - - - |   Example 1: Simplify: -3 - +8  -3 – (+8)  -3 – 8  **-11** |
|  | Example II: Simplify: +3 - +5  +3 – (+5) +ve + + +  √ √  +3 – 5 -ve - - - - -  **-2** |
|  | **LEARNER’S ACTIVITY** |
| **Simplify** | |
| (a) | -3 - +3 |
| (b) | -7 - -3 |
| (c) | -4 - -5 |
| (d) | +3 - -4 |
| (e) | +5 - +2 |
| (f) | +5 - -7 |
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|  | **Date : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **LESSON 37: PLOTTING INTEGERS ON NUMBER LINE USING**  **ARROWS**  **Example 1:** Draw an arrow of *x* = +4 on a number line  +4  -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5  **Example II:**  Draw an arrow to represent y = -7 on a number line.  -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5  -7 |
|  | **LEARNER’S ACTIVITY** |
| 1. | Draw arrows on a number line to represent |
| (a) | a = -6  -9 -8 -7 -6 -5 -4 -3 -2 -1 +0 +1 +2 |
| (b) | *x* = +3  -2 -1 +0 +1 +2 +3 +4 +5 |
| (c) | y = -7  -9 -8 -7 -6 -5 -4 -3 -2 -1 +0 +1 +2 |
| (d) | r = +5  -2 -1 +0 +1 +2 +3 +4 +5 +6 +7 +8 +9 |

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|  | **Date : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **LESSON 38: GIVE THE VALUES OF AN ARROW DRAWN ON**  **A NUMBER LINE**  **Example: 1**  Give the value of x, y, q  *y*  *x*  -4 -3 -2 -1 0 +1 +2 + 3 +4 +5 +6 +7 +8 +9  q   1. x = -4 2. y = +5 3. q = +5 |
|  | **Example II**  -7 -6 -5 -4 -3 -2 -1 0 +1 +2 + 3 +4 +5 +6  *b*  *a*  *a*  *d*  *e*  *c*  Give the value of:-   1. a = -3 2. b = +3 3. c = -2 4. d = +4 5. e = +5 |
|  | **LEARNER’S ACTIVITY** |
|  | Study the drawn number line. |
| 1. | -4 -3 -2 -1 0 +1 +2 + 3 +4 +5 +6 +7 +8 +9  r  q  p  Give the value of   1. r = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2. q = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 3. p = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 2. | Use the number line below:-  c  b  a  -4 -3 -2 -1 0 +1 +2 + 3 +4 +5 +6 +7 +8 +9  Give the value of:   1. a = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2. b = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 3. c = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
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|  | **Date : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **LESSON 39: WRITING AN ADDITIONAL STATEMENT**  ***Steps taken***   * Give their values * Write the additional statements.   **Example 1:**  *Write the addition statement for the number line below:-*  -5  -6 -5 -4 -3 -2 -1 0 +1 +2 + 3 +4 +5 +6 +7  -3  +(-2)  **Write the addition statement fort**  +3 + 2 = 5 |
|  | **Example II**  p  Write the mathematical statement for the number line below.  r  -7 -6 -5 -4 -3 -2 -1 0 +1 +2 + 3 +4 +5 +6  q  p  q  p + q = r  -4 + +8 = +4  -4 + +8 = +4 |
|  | **LEARNER’S ACTIVITY** |
| (a) | Write the mathematical statements for the arrows shown on the number line. |
| 1. | Write the addition statement on the number line below:-  + 3  -5  +(+8)  -5 -4 -3 -2 -1 +0 +1 +2 +3 +4 |
| 2. | Write the subtraction sentence for the arrows on the numberline.  -6  +4  -10  -7 -6 -5 -4 -3 -2 -1 0 +1 +2 + 3 +4 +5 +6 |
| 3.  (a) | Write the mathematical statement for each arrow shown on the number line.  -7 -6 -5 -4 -3 -2 -1 0 +1 +2 + 3 +4 +5 +6  b  c  a |
| (b) | -7 -6 -5 -4 -3 -2 -1 0 +1 +2 + 3 +4 +5 +6  z  y  x  y  x |
| 4. | Write a mathematical statement for the integers on the numberline below.  -7 -6 -5 -4 -3 -2 -1 0 +1 +2 + 3 +4 +5 +6  b  a  c  -7 -6 -5 -4 -3 -2 -1 0 +1 +2 + 3 +4 +5 +6  b  a  c  -7 -6 -5 -4 -3 -2 -1 0 +1 +2 + 3 +4 +5 +6  b  a  c |

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| **Date : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **LESSON 40: WRITING A SUBTRACTION STATEMENT**  **Steps taken**   1. Give the value for each arrow. 2. Write the subtraction statement   **Example 1:**  *Write the subtraction statement for the number line below:-*  -1  -6 -5 -4 -3 -2 -1 0 +1 +2 + 3 +4 +5 +6 +7  +3  -(+4)  **Write the addition statement fort**  **+3 - +4 = -1** | |
| **Example II**  p  Write the subtraction statement for the number line below  a  c  -7 -6 -5 -4 -3 -2 -1 0 +1 +2 + 3 +4 +5 +6  b  **-4 - -7 = +3** | |
|  | **LEARNER’S ACTIVITY** |
| 1. (a) | Write the subtraction statement for the following number lines  -5 -4 -3 -2 -1 +0 +1 +2 +3 +4  r  q  p |
| (b) | -7 -6 -5 -4 -3 -2 -1 0 +1 +2 + 3 +4 +5 +6  b  a  c |
| (c) | -7 -6 -5 -4 -3 -2 -1 0 +1 +2 + 3 +4 +5 +6  y  z  x |
| (d) | -7 -6 -5 -4 -3 -2 -1 0 +1 +2 +3 +4 +5 +6  O  r  P |
| (e) | III  II  -7 -6 -5 -4 -3 -2 -1 0 +1 +2 + 3 +4 +5 +6 |
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|  | **Date : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **LESSON 41: SOLVING WORD PROBLEMS INVOLVING**  **APPLICATION OF INTEGERS**  ***Steps taken***   * *Read and interpret correctly.* * *Develop mathematical statements.* * *Operate accurately*   **Example 1:**  What integer is 4 steps right of -1?  ***What integer is 4 steps right of -1***  **Write the addition statement fort**  -6 -5 -4 -3 -2 -1 0 +1 +2 + 3 +4 +5 +6 +7  +4   * From -1 move 4 steps on your right. * The final step is the outcome.   **-1 + 4 = +3** |
|  | **Example II**  -7 -6 -5 -4 -3 -2 -1 0 +1 +2 + 3 +4 +5 +6  +6   * From +2 more 6 steps on your left. * The final step is the outcome.   **+2 - 6 = -4** |
|  | **LEARNER’S ACTIVITY** |
| 1. | What integer is 6 steps right of -2? |
| 2. | What integer is 5 steps left of +5. |
| 3. | Raymond had 30,000shs. he received shs. 50,000, he wanted to buy a radio for shs. 100,000. How much money does he need? |
| 4. | Jimmy played a game on a computer with his friend at Bright Stars School. He won 12 points, then lost 7 points then lost 5 points, then won 7 points, then won 2 points and finally lost 9 points. What was his final score? |
| 5. | In another game, Jimmy recorded his scores as +4 + 5 + -6 + +10 + -9 |

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|  | **Date : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **LESSON 42: MATHEMATICAL PHRASES**  In mathematics, we often use symbols to translate word phrases into mathematical expressions.  The following are some of the word phrases that we associate with each other of the four operations.   |  |  |  |  | | --- | --- | --- | --- | | **+** | **-** | **x** | **÷** | | Add  Sum  Plus  Total  More than  Increased by | Subtract  Difference  Minus  Remainder  Decreased by | Multiply  Product  Time | Divide  Share  Quotient |   Example: Write the mathematical expression for these phrases.   1. 3 more than t.   Add 3 to t  1 + 3   1. 4 less than y   Subtract 4 from y  y - 4   1. Divide n by 2 and add it to results.   + 3   1. y multiplied by 3.   y x 3 OR 3y | | | |
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|  | **LEARNER’S ACTIVITY** | | | |
| (a) | The product of m and n | (b) | | Subtract y from 10 |
| (c) | 5 less than k | (d) | | A quarter the difference between u and y. |
| ***2.*** | ***Write the algebraic expression for the following phrases.*** | | | |
| (a) | The sum of twice n and thrice b. | (b) | | Subtract q from p |
| 5. | The quotient of x and y. | (d) | Multiply the difference between P and 2 by 3. | |
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| (a) | x + y | (b) |  |
| (c) |  | (d) |  |
| (e) | py |  |  |
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|  | **LEARNER’S ACTIVITY** | | |
| 1. | Given that a = 3, b = 7. Find the value of   1. 2a + 2b | (ii) | 2b - 3a |
|  | 1. a + b | (iv) | ab |
| 2. | Given that c = d = -2,  e = 3. Find the value of   1. c + d | (ii) | cde |
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| **Date : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **LESSON 45: EQUATIONS**  A mathematical sentence with an equal sign to indicate that two expressions give the same value.  Find the unknown  **Note:** *Addition and subtraction are related operations.*  **Steps taken**   * Either subtract or add on both sides where applicable. * Operate correctly | | | |
| **Example I:**  *Solve for x*  x + 9 = 20  x + 9 - 9 = 20 - 9  **x = 11** | | **Example II:**  *Solve for p*  p + 5 = 13  p + 5 - 5 = 13 - 5  **p = 8** | |
| **Example III:**  *Find the value of y*  y - 12 = 18  y - 12 - 12 = 18 + 12  **y = 30** | | **Example III:**  *Solve for r*  r - 7 = 10  r - 7 - 7 = 10 + 7  **r = 17** | |
| **LEARNER’S ACTIVITY** | | | |
| 1. | Solve for the unknowns | | |
| (a) | a + 6 = 10 | (b) | x - 4 = 9 |
| (c) | r + 11 = 13 | (d) | y - 6 = 4 |
| (e) | 6 + t = 15 | (f) | m - 14 = 17 |
| (g) | x + 9 = 12 | (h) | t + 14 = 15 |

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| **Date : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **LESSON 46: EQUATIONS INVOLVING DIVISION AND**  **MULTIPLICATION**  **Steps taken**   * *Multiply or divide same numbers on both sides.* * *Operate accurately.* | | | |
| **Example I:**  *Solve for a*  2a = 10  =  **a = 5** | | **Example II:**  *Find the value of t.*  4t = 28  =  **a = 7** | |
| **Example III:**  *Solve for n.*  = 7  2 x = 7 x 2  **n = 14** | | **Example III:**  *Solve for n.*  = 5  x 7 = 5 x 7  **x = 35** | |
| **LEARNER’S ACTIVITY** | | | |
| 1. | Solve for unknowns | | |
| (a) | = 7 | (b) | = 8 |
| (c) | 2n = 18 | (d) | 9y = 27 |
| (e) | 12k = 48 | (f) | 9y = 4 |
| (g) | = | (h) | = 0.3 |

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| **Date : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **LESSON 47: SOLVING EQUATIONS INVOLVING MORE THAN ONE**  **OPERATION (MIXED OPERATION)** | | | |
| **Example I:** *Solve for a*  2a + 3 = 11  2a + 3 - 3 = 11 - 3  =  **a = 4** | | **Example II:** *Solve for x*  + 4 = 10  + 4 – 4 = 10 – 4  = 6  x 3 = 6 x 3  ***x* = 18** | |
| **Example III:** *Solve for y.*  2y - 7 = 5  2y - 7 + 7 = 5 + 7  =  **y = 6** | | **Example III:** *Solve for x.*  - 4 = 6  - 4 + 4 = 6 + 4  = 10  x 3 = 10 x 3  =  ***x* = 15** | |
| **LEARNER’S ACTIVITY** | | | |
| 1. | Solve for unknown | | |
| (a) |  | (b) | - 2 = 7 |
| (c) | 4x - 3 = 9 | (d) | 2p + 3 = 6 |
| (e) | + 4 = 14 | (f) | 3p - 6 = p + 10 |
| (g) | 2m – 5 = 11 | (f) | 4y + 1 = 9 |
| (i) | = 3 | (j) | 4k + 2 = 18 |

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| **Date : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **LESSON 48: COLLECTING LIKE TERMS AND SOLVING**  **EQUATIONS** | | | |
| **Example I:** *Solve.*  m + 4m = 20  =  **m = 4** | | **Example II:**  Musa is as twice as Mugabi. Their total age is 18 years. How old is Mugabi?   |  |  |  | | --- | --- | --- | | **Musa** | **Mugabi** | **Total** | | 2x | x | 18yrs |   2x + x = 18  =  **x = 6years** | |
| **Example III:**  Nakayenga is twice the age of Nakaye. Their total age is 24. Find their ages.   |  |  |  | | --- | --- | --- | | **Nakaye** | **Nakayenga** | **Total** | | p | 2p | 24 |       P + 2p = 24  =  **p = 8**  Nakaye is 8 years  Nakayenga is 2p = 2 x 8  **= 16** | | | |
| **LEARNER’S ACTIVITY** | | | |
| 1. | Collect like terms and solve. | | |
| (a) | 3y + y = 12 | (b) | y + y + 2y = 24 |
| (c) | p + 5p + 2p = 40 | | |
| 2. | A mother is 4 times as old as her daughter. Their total age is 30 years. Find the daughter’s age. | | |
| 3. | Opio weighs 3x (kg) and Wasswa weighs 4k (kg). if their total weight is 140 kg. Find Opio’s weight. | | |
| 4. | A father is 3 times the age of his son. Their total age is 48 years. How old is the daughter? | | |
| 5. | Namukasa is twice the age of her son. Their total age is 36years. How old is the son? | | |
| 6. | Mubiru is twice the age of his brother. Their total age is 42 years. How old is each now? | | |
| 7. | Makalu is 4 times the age of his daughter. their total age is 60 years. How old is each? | | |

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| **Date : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **LESSON 49: FORMING AND SOLVING EQUATIONS** | | |
| **Example I:**  A boy is 5 years older than his sister. Their total age is 19 years. Find their ages.   |  |  |  | | --- | --- | --- | | **Sister** | **Boy** | **Total** | | m | m+s | 19 |   (m + m)+5 = 19  2m + 5-5 = 19 – 5  =  **M = 7**  Boy = 5 + 7 **= 12 years**  Sister = **7 years** | | **Example II:**  Namuswa has 7 more cows than Kakonge. Altogether they have 47 cows. how many cows does each one have.?   |  |  |  | | --- | --- | --- | | **Namuswa** | **kakonge** | **Total** | | P | P + 7 | 47 |   (p + p)+ 7 = 47  2p + 7 - 7 = 47 – 7  =  **P = 20**  Namuswa = **20 years**  Kakonge = 20 + 7  **= 12 years** |
| **LEARNER’S ACTIVITY** | | |
| 1. | Namuwonge got 6 more books than her brother Mulika. Altogether they got 24 books. How many books did Mulika got? | |
| 2 | Ntungo is 4 years older than Nuwa. Their total age is 22 years. How old is Ntunga? | |
| 3. | Nalumunye got 96 more pupils than Bandwe. Their total number is 960pupils. How many pupils are in Bandwe? | |
| 4. | Ntuyo is 8 years older than the sister. Their total age is 48 years. Find their ages. | |

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| **Date : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **LESSON 50: SOLVING EQUATIONS FORMED FROM POLYGONS** | | | | |
| **Example I:**  The square has all its sides  equal.  (x + 5)cm  (2x + 1)cm   1. Find the value of x   2x + 1 = x + 5  2x – x = 5 – 1  **x = 4**   1. Find the actual length of its   sides.  2x + 1  (2 x 4) + 1  8 + 1  **9cm**   1. Workout its area,   Area = L x L  9 x 9  **81cm2** | | **Example II:**  Find the value of x in the figure below.  (Opposite sides of a rectangle are equal)  (x + 3)cm  (2x - 1)cm  (x + 1)cm   1. Find the value of x.   2x – 1 = x + 3  2x – x = 3 + 1  **x = 4**   1. Find the actual length and width of the figure.   **Length Width**  x + 3 x + 1  4 + 3 4 + 1  **7cm**  **5cm**   1. Area = L x W   7 x 5  **35cm2**  Perimeter = 2L + 2W  = (2x7) + (2 x 5)  = 14 + 10  =  **24cm** | | |
| **LEARNER’S ACTIVITY** | | | | |
| 1. | (3x - 3)cm  (x + 1)cm  (2x + 4)cm  (a) Find the value of x | | 2.  (a) | 3*x*cm  9cm  Find the value of x |
| (b) | Find the area and perimeter | | (b) | Work out the area and perimeter |
| 3. | (x + 4)cm  (2x – 4)cm   1. Find the value of x | | 4.  (a( | (x +3)cm  (2x - 2)cm  x cm  Find the value of x |
| (b) | Work out the area and perimeter | | (b)  (c) | Find the actual length and width  Workout the area and perimeter |
| 5.  (a( | 3x cm  15cm  x + 2cm  Find the value of x | | b | Find the actual length and width |
| (c) | Work out the perimeter and area | | | |

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| **Date : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **LESSON 51: FORMING AND SOLVING MORE EQUATIONS** | | | |
| **Example I:**  p  2p  P = L + W + L + W  2P + P + 2P + P = 24  =  **P = 4**  Length = 2 x 4  **= 8cm**  Width **= 4cm**  Area = L x W  = 8 x 4  **= 32cm2** | | Width = x + 2  6 + 3 =  **8cm**  Length = 3x  3 x 6 =  **18cm**   1. Work out its area   Area = L x w  = 8 x 18  = **144cm2**   1. Find the perimeter.   2L + 2N = P  (2 x 18) + (2 x 8)  36 + 16  **52cm** | |
| **Example II:**  Three of the sides of a rectangle in order are 3x, x + 2 and 2x + 6. Find the perimeter.  (3x)cm  (2x + 6)cm  (x + 2)cm  3x = 2x + 6  3x – 2x = 6  **x = 6cm** | |
| **LEARNER’S ACTIVITY** | | | |
| 1. | The length of a rectangle is 2cm more than its width.  Find its area if the perimeter is 20cm. | (2) | The length of a rectangle is twice its width. The perimeter of the rectangle is 300cm Find its area. |
| 3. | The width of a rectangle is 3cm less than its length. Its perimeter is 22cm. Find its area. | | |
| 4. | The sides of a square are (4x + 4)cm and (3x + 6)cm. Find the value of x and its area. | | |
| 5. | Three sides of a rectangle are in order as (5x + 7), 2x and x +19)cm.   1. Find the value of x and its area. 2. Work out its perimeter. | | |

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