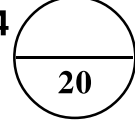


FORMATIVE ASSESSMENT - II - 2023 - 24
MATHEMATICS



Class : VII]

(Max. Marks : 20)

[Time : 45 Min.

<https://sureshmathsmaterial.com/>

Name of the Student : Roll No. :

I. Solve the following problems.

4 x 1 = 4

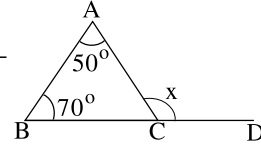
ఈ క్రింది సమస్యలను సాధించుము.

1. The median of 13,16,12,14,19 is _____

13, 16, 12, 14, 19 ల మధ్యగతం _____

2. The value of x in the adjacent figure is _____

ప్రక్క పటంలో, x విలువ _____



3. If two angles are supplementary, then those two angles are

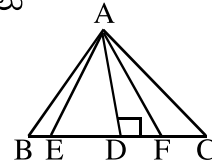
[]

రెండు కోణాలు సంపూర్ణకాలుగా ఉంటే, ఆ రెండు కోణాలు

- | | |
|-------------------------------|----------------------------------|
| a) Acute angles
అల్పకోణాలు | b) Obtuse angles
అధిక కోణాలు |
| c) Right angles
లంబకోణాలు | d) Straight angles
సరళ కోణాలు |

4. In $\triangle ABC$, \overline{AD} is called _____

$\triangle ABC$ నందు \overline{AD} ను _____ అంటారు.



II. Solve the following problems.

2 x 2 = 4

క్రింది సమస్యలను సాధించుము.

5. The ages (in years) of 10 teachers in a school are 32, 41, 28, 54, 35, 26, 23, 33, 38, 40.

పాఠశాలలోని 10 మంది ఉపాధ్యాయుల వయస్సు (సంవత్సరాలలో)

32,41,28,54,35,26,23,33,38,40

i) What is the **Range** of the above data?

పై దత్తాంశం యొక్క వ్యాప్తి ఎంత ?

ii) What is the **Mean** of the above data?

పై దత్తాంశం యొక్క సగటు ఎంత ?

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[Turn Over

6. The ratio of three angles of a triangle is 1 : 2 : 1, then find the angles of the triangle.

ఒక త్రిభుజంలోని మూడు కోణాల నిష్పత్తి 1 : 2 : 1 అయిన, ఆ త్రిభుజంలోని కోణాల విలువలను కనుగొనుము?

III. Solve the following problem.

1 x 4 = 4

క్రింది సమస్యను సాధించుము.

7. Identify which of the following pairs of angles are complementary and which are supplementary

క్రింది వాటిలో పూరక కోణాల జతలను, సంపూరక కోణాల జతలను గుర్తించండి.

- i) $65^\circ, 115^\circ$ ii) $63^\circ, 27^\circ$ iii) $112^\circ, 68^\circ$ iv) $130^\circ, 50^\circ$ v) $45^\circ, 45^\circ$
vi) $30^\circ, 150^\circ$, vii) $60^\circ, 30^\circ$, viii) $20^\circ, 70^\circ$

IV. Solve the following problems.

1 x 8 = 8

క్రింది సమస్యను సాధించుము.

8. a) i) Solve $4(m + 3) = 18$

సాధించండి : $4(m + 3) = 18$

ii) The sum of three times of a number and 11 is 32. Find the number?

ఒక సంఖ్య యొక్క మూడు రెట్లు మరియు 11ల మొత్తం 32. అయితే ఆ సంఖ్యను కనుగొనుము ?

(Or)

b) In the adjoining figure, identify

పక్క పటంలో కింది వాటిని గుర్తించండి.

i) The pairs of corresponding angles

సదృశ్యకోణాల జతలు

ii) The pairs of alternate interior angles

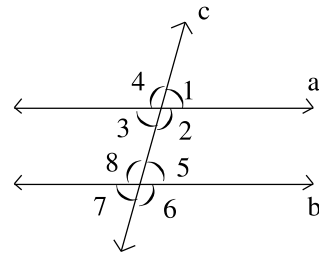
ఏకాంతర కోణాల జతలు

iii) The pairs of interior angles on the same side of the transversal

తిర్వగ్రేఖకు ఒకవైపు ఉన్న అంతరకోణాల జత

iv) The vertically opposite angles

శీర్షాభిముఖ కోణాలు



FORMATIVE ASSESSMENT-2-2023-24

VII -Mathematics -Solutions

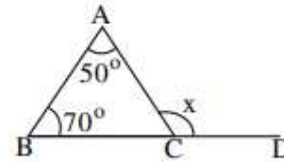
Prepared by :BALABHADRA SURESH

1. The median of 13,16,12,14,19 is **14**

Sol: Ascending order: 12,13,**14**,16,19

Median=14

2. The value of x in the adjacent figure is **120°**



Sol: Exterior angle = Sum of interior opposite angles

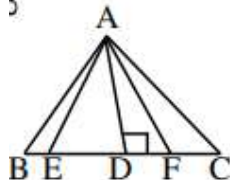
$$x = 50^\circ + 70^\circ = 120^\circ$$

3. If two angles are supplementary, then those two angles are [c]

a) Acute angles b) Obtuse angles **c) Right angles** d) Straight angles

4. In $\triangle ABC$, \overline{AD} is called

Sol: Altitude.



5. The ages (in years) of 10 teachers in a school are 32, 41, 28, 54, 35, 26, 23, 33, 38, 40.

- i) What is the Range of the above data?

Sol: Range = Highest value – Lowest value = $54 - 23 = 31$

- ii) What is the Mean of the above data?

Sol: Mean =
$$\frac{\text{Sum of all observations}}{\text{number of observations}} = \frac{23 + 26 + 28 + 32 + 33 + 35 + 38 + 40 + 41 + 54}{10}$$

$$= \frac{350}{10} = 35$$

6. The ratio of three angles of a triangle is $1 : 2 : 1$, then find the angles of the triangle.

Sol: Let the angles are $x, 2x, x$

$$x + 2x + x = 180^\circ \text{ (Angle sum property of triangle)}$$

$$4x = 180^\circ$$

$$x = \frac{180^\circ}{4} = 45^\circ$$

The angles are $45^\circ, 2 \times 45^\circ, 45^\circ$ i.e $45^\circ, 90^\circ, 45^\circ$

7. Identify which of the following pairs of angles are complementary and which are supplementary.

- i) $65^\circ, 115^\circ$ ii) $63^\circ, 27^\circ$ iii) $112^\circ, 68^\circ$ iv) $130^\circ, 50^\circ$ v) $45^\circ, 45^\circ$ vi) $30^\circ, 150^\circ$ vii) $60^\circ, 30^\circ$ viii) $20^\circ, 70^\circ$

Sol: (i) $65^\circ + 115^\circ = 180^\circ$

$65^\circ, 115^\circ$ are supplementary angles.

(ii) $63^\circ + 27^\circ = 90^\circ$

$63^\circ, 27^\circ$ are complementary angles.

(iii) $112^\circ + 68^\circ = 180^\circ$

$112^\circ, 68^\circ$ are supplementary angles.

(iv) $130^\circ + 50^\circ = 180^\circ$

$130^\circ, 50^\circ$ are supplementary angles.

(v) $45^\circ + 45^\circ = 90^\circ$

$45^\circ, 45^\circ$ are complementary angles.

(vi) $30^\circ + 150^\circ = 180^\circ$

$30^\circ, 150^\circ$ are supplementary angles.

(vii) $60^\circ + 30^\circ = 90^\circ$

$60^\circ, 30^\circ$ are complementary angles.

(viii) $20^\circ + 70^\circ = 90^\circ$

$20^\circ, 70^\circ$ are complementary angles

8. a) i) Solve $4(m + 3) = 18$

Sol: $4(m + 3) = 18$

Divide both sides by '4'.

$$\frac{4(m + 3)}{4} = \frac{18}{4}$$

$$m + 3 = \frac{9}{2}$$

$$m = \frac{9}{2} - 3 \text{ (transposing 3 to RHS)}$$

$$m = \frac{9 - 6}{2} = \frac{3}{2}$$

(OR)

Sol: $4(m + 3) = 18$

$$4m + 12 = 18 \text{ (Distributive law)}$$

$$4m = 18 - 12$$

$$4m = 6$$

$$m = \frac{6}{4} = \frac{3}{2}$$

(ii) The sum of three times of a number and 11 is 32. Find the number?

Sol: Let the number = x

From problem: $3x + 11 = 32$

$$3x = 32 - 11 \text{ (transposing 11 to RHS)}$$

$$3x = 21$$

Divide both sides by '3'

$$\frac{3x}{3} = \frac{21}{3}$$

$$x = 7$$

The required number is 7.

b) In the adjoining figure, identify.

i) The pairs of corresponding angles.

$\angle 1$ and $\angle 5$, $\angle 2$ and $\angle 6$, $\angle 3$ and $\angle 7$, $\angle 4$ and $\angle 8$.

ii) The pairs of alternate interior angles.

$\angle 3$ and $\angle 5$, $\angle 2$ and $\angle 8$

iii) The pairs of interior angles on the same side of the transversal.

$\angle 3$ and $\angle 8$, $\angle 2$ and $\angle 5$

iv) The vertically opposite angles.

$\angle 1$ and $\angle 3$, $\angle 2$ and $\angle 4$, $\angle 5$ and $\angle 7$, $\angle 6$ and $\angle 8$

