MATHS

BOOKS - RD SHARMA MATHS (HINGLISH)

LINES AND ANGLES

All Questions

1. Find the measure of an angle which is complement of itself.

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2. Find the angle which is equal to its supplement.

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3. Two supplementary angles differ by 34^0. Find the angles.

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4. An angle is equal to five times its complement. Determine its measure.

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5. In Fig. 7, $OA\ and\ OB$ are opposite rays: (i) If x=75 find the value of y (ii) if y= 110 find the bvalue of x

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6. In Fig. $8,\ \angle AOC\ and\ \angle BOC$ form a linear pair. Determine the value of x.

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7. In Fig.9, if ray OC stands on line AB such that $\angle AOC = \angle COB$, then show that $\angle AOC = 90^0$.

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8. In Fig.10, lines $l_1 \; and \; l_2$ interest at O, forming angles as shown in the figure. If $a = 35$, find the value of b, $c \; and$ ..

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9. In Fig. 11, determine the value of y.

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10. In Fig. 12, two straight lines $PQ \; and \; RS$ intersect each other at O. If $\angle POT = 75^0$, find the values of a, $b \; and$.

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11. Write down each pair of adjacent angles shown in Fig. 13.

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12. In Fig.14, name all the pairs of adjacent angles.

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13. In Fig. 15, write down: (i) each linear pair (ii) each pair of vertically opposite angles.

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14. Are the angles 1 and 2 given in Fig. 16 adjacent angles?

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15. Find the complement of each of the following angles: (i) 35^0 (ii) 72^0

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16. Find the complement of each of the following angles: (i) 45^0 (ii) 85^0

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17. Find the supplement of each of the following angles: (i) 70^0 (ii) 120^0 .

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18. Find the supplement of each of the following angles: (i) 135^0 (ii) 90^0

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19. Identify the complementary and supplementary pairs of angles from the following pairs: (i) $25^0, 65^0$ (ii) $120^0, 60^0$.

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20. Identify the complementary and supplementary pairs of angles from the following pairs: (i) $63^0, 27^0$ (ii) $100^0, 80^0$.

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21. Can two angles be supplementary, if both of them be (i) Obtuse? (ii) Right? (iii) Acute?

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22. Name the four pairs of supplementary angles shown in Fig.17.

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23. In Fig.18 A, B, C are collinear point and $\angle DBA = \angle EBA$. (i) Name two linear pairs (ii) Name two pairs of supplementary angles.

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24. If two supplementary angles have equal measure, what is the measure of each angles?

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25. If the complement of an angle is 28^0 , then find the supplement of the angle.

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26. In Fig.19, name each linear pair and each pair of vertically opposite angles:

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27. In Fig.20, OE is the bisector of $\angle BOD$. if $\angle 1 = 70^0$, find the magnitudes of $\angle 2,\ \angle 3\ and\ \angle 4$.

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28. One of the angles forming a linear pair is a right angle. What can you say about its other angle?

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29. One of the angles forming a linear pair is an obtuse angle. What kind of angle is the other?

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30. One of the angles forming a linear pair is an acute angle. What kind of angle is the other?

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31. Can two acute angles from a linear pair?

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32. If the supplement of an angle is $65^0;$ then find its complement.

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33. Find the value of x in each of the following figures.

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34. In Fig.22, it being that $\angle 1 = 65^0$, find all other angles.

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35. In Fig.23, $OA\ and\ OB$ are opposite rays: (i) If $(ii)(iii)x = (iv)(v)25^{(vi)0(vii)}(viii), (ix)$ (x) what is the value of $(xi)(\xi i)y?(\xi ii)$ (xiv) (xv) If $(xvi)(xvii)y = (xviii)(\xi x)35^{(xx)0(xxi)}(xxii), (\times iii)$ (xxiv) what is the value of $(xxv)(\times vi)x?(\times vii)$ (xxviii)

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36. In Fig.24, write all pairs of adjacent angles and all the linear pairs.

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37. In Fig.25, find $\angle x$. Further find $\angle BOC,\ \angle COD\ and\ \angle AOD$.

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38. How many pairs of adjacent angles are formed when two lines intersect in a point?

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39. How many pairs of adjacent angles, in all, can you name in Fig.26?

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40. In Fig.27, determine the value of x.

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41. In Fig.28, AOC is a line, find x.

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42. In Fig.29, POS is a line, find x.

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43. In Fig. 30, lines l_1 and l_2 intersect at O, forming angles as shown in the figure. If $x = 45^0$, find the values of y, z and u.

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44. In Fig.31, three coplanar lines intersect at a point O, forming angles as shown in the figure. Find the value of x, y, z and u.

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45. In Fig.32, find the values of x, y and z.

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46. In Fig. 48, line $l \ || \$ line m, n is transversal and $\angle 1 = 40^0$. Find all the other angles marked in the figure.

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47. In Fig. 49, $m \ || \ n \ and \ \angle 1 = 65^0$. Find $\angle 5 \ and \ \angle 8$.

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48. In Fig. 50 $m \ || \ n$ and angles 1 and 2 are in the ratio $3:2$. Determine all the angles from 1 to 8.

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49. In Fig. 51, l, $m \ and \ n$ are parallel lines intersected by a transversal $p \ at \ X, Y \ and \ Z$ respectively. Find $\angle 1$, $\angle 2$ and $\angle 3$. Give reasons.

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50. In Fig. 52. $AB \mid\mid CD$. Determine $\angle a$.

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51. In Fig. 53, $AB \mid\mid CD$. Determine x.

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52. In Fig. 54, if $\angle 2 = 120^0 \; and \; \angle 5 = 60^0$, show that $m \mid\mid n$.

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53. In Fig.55, if $\angle 3 = 61^0$ and $\angle 7 = 118^0$. Is $m \mid\mid n$?

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54. In Fig.56, give reasons why $l_1 \| \left(\| l_2 \dot{I} s\ m_1 \| \right) \| m_2$?

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55. In Fig.57, show that $AB \| \| EF$.

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56. In Figure, line n is a transversal to line l and m. Identify the following:

i) Alternate and corresponding angles in Fig. 58 (i)

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57. In Fig.59, AB and CD are parallel lines intersected by a transversal PQ at L and M respectively, If $\angle CMQ = 60^0$ find all other angles in the figure.

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58. In Fig. 60, $AB\ and\ CD$ are parallel lines intersected by a transversal PQ at L and M respectively. If $\angle LMD = 35^0$ find $\angle PLA$.

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59. The line n is transversal to line $l\ and\ m$ in Fig.61. Identity the angle alternate to $\angle 13$, angle corresponding to $\angle 15$, and angle alternate to $\angle 15$.

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60. In Fig. 62, line $l \mid\mid m\ and\ n$ is a transversal. If $\angle 1 = 40^0$, find all the angles and check that all corresponding angles and alternate angles are equal.

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61. In Fig. 63, line $l \mid\mid m$ and a transversal n cuts them at P and Q respectively. If $\angle 1 = 75^0$, find all other angles.

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62. In Fig. 64, $AB \mid\mid CD$ and a transversal PQ cuts them at $L \, and \, M$ respectively. If $\angle QMD = 100^0$, find all other angles.

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63. In Fig.65, $lm \, and \, pq$. Find the value of x, y, z, t.

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64. In Fig 66, $l \in e \, lm$, $\angle 1 = 120^0$ and $\angle 2 = 100^0$, find out $\angle 3 \, and \, \angle 4$.

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65. In fig. 67, $l \in e\ lm$. Find the value of $a, b, c, ..$ Give reasons.

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66. In Fig. 68, $ABCD\ and\ \angle 1\ and\ \angle 2$ are in the ratio $3:2$. Determine all angles from $1 \rightarrow 8$.

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67. In Fig. $l,\ m\ and\ n$ are parallel lines intersected by transversal p at $X,\ Y\ and\ Z$ respectively. Find $\angle 1,\ \angle 2\ and\ \angle 3$

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68. In Fig.70. if $lmn\ and\ \angle 1 = 60^0$, find $\angle 2$.

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69. In Fig. 71, if $ABCD \text{ and } CDEF,$ find $\angle ACE$

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70. In Fig.72, If $lm, \ np \text{ and } \angle 1 = 85^0,$ find $\angle 2.$

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71. In Fig. 73, a transversal n cuts two lines $l \text{ and } m$ if $\angle 1 = 70^0 \text{ and } \angle 7 = 80^0,$ is lm?

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72. In Fig. 74, a transversal n cuts two lines $l \text{ and } m$ such that $\angle 2 = 65^0$ and $\angle 8 = 65^0.$ Are the lines parallel?

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73. In Fig. 75, Show that $ABEF$.

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74. In Fig.76, $ABCD$. Find the value of x, y, z.

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75. In Fig.77, find out $\angle PXR$, if $PQRS$.

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76. In Fig.78, we have (i) $(ii)(iii)\angle MLY = 2\angle LMQ, (iv)$ (v) find $(vi)(vii)\angle LMQ(viii)$ (ix) (x) $(xi)(\xi i)\angle XLM = (xiii)(\xi v)((xv)(xvi)2x - 10(xvii))^{(xviii)0(xix)}(xx)(\times$ (xxii) and $(xxiii)(\times iv)\angle LMQ = x + (xxv)(\times vi)30^{(xxvii)0(xxviii)}(xxix), (\times x)$ (xxxi) find $(xxxii)(\times \xi ii)xxx\dot{x}iv$ (xxxv) (xxxvi)

$(xxxvii)(\times xviii)\angle XLM = \angle PML,\ (xxxix)$ (xl) find

$(xli)(xlii)\angle ALY(xliii)$ (xliv) (xlv)

$(xlvi)(xlvii)\angle ALY = (xlviii)(xlix)((l)(li)2x - 15(lii))^{(liii)0(liv)}(lv),\ \angle$

(lxv) find $(lxvi)(lxvii)xlx\dot{v}iii$ (lxix)

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77. In Fig.79, $DEBC$. Find the value of x *and* y.

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78. In Fig.80, line $ACl \in e\ DE\ and\ \angle ABD = 32^0$. Find out the angles x *and* y if $\angle E = 122^0$.

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79. In Fig.81, side BC of ABC has been produced to D and $CEBA$. If $\angle ABC = 65^0,\ \angle BAC = 55^0$, find $\angle ACE,\ \angle ECD\ and\ \angle ACD$.

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80. In Fig.82, line $CA \perp AB$ line CR and line PR line BD. Find $\angle x, \angle y \; and \; \angle z$.

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81. In Fig.83, $PQRS$. Find the value of x.

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82. In Fig.84, $ABCD \; and \; AECF$; $\angle FCG = 90^0 \; and \; \angle BAC = 120^0$. Find the values of $x, y \; and \; z$.

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83. In Fig.85, $ABCD \; and \; ACBD$. Find the value of x, y, z.

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84. In Fig.86, state which lines are parallel and why?

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85. In Fig.87, the corresponding arms of $\angle ABC \; and \; \angle DEF$ are parallel. If $\angle ABC = 75^0$, find the $\angle DEF$.

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86. The sum of an angle and one third of its supplementary angle is 90^0. The measure of the angle is (a) $(b)(c)(d)(e)135^{(f)0(g)}(h)(i)$ (j) (b) $(k)(l)(m)(n)120^{(o)0(p)}(q)(r)$ (s) (c) $(d)(e)(f)(g)60^{(h)0(i)}(j)(k)$ (l) (d) $(m)(n)(o)(p)45^{(q)0(r)}(s)(t)$ (u)

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87. If angles of a linear pair are equal, then the measure of each angle is (a) $(b)(c)(d)(e)30^{(f)0(g)}(h)(i)$ (j) (b) $(k)(l)(m)(n)45^{(o)0(p)}(q)(r)$ (s) (c) $(d)(e)(f)(g)60^{(h)0(i)}(j)(k)$ (l) (d) $(m)(n)(o)(p)90^{(q)0(r)}(s)(t)$ (u)

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88. Two complementary angles are in the ratio $2:3$. The measure of the larger angle is (a) $(b)(c)(d)(e)60^{(f)0(g)}(h)(i)$ (j) (b) $(k)(l)(m)(n)54^{(o)0(p)}(q)(r)$ (s) (c) $(d)(e)(f)(g)66^{(h)0(i)}(j)(k)$ (l) (d) $(m)(n)(o)(p)48^{(q)0(r)}(s)(t)$ (u)

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89. An angle is thrice its supplement. The measure of the angle is (a) $(b)(c)(d)(e)120^{(f)0(g)}(h)(i)$ (j) (b) $(k)(l)(m)(n)105^{(o)0(p)}(q)(r)$ (s) (c) $(d)(e)(f)(g)135^{(h)0(i)}(j)(k)$ (l) (d) $(m)(n)(o)(p)150^{(q)0(r)}(s)(t)$ (u)

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90. In Fig.88 PR is a straight line and $\angle PQS : \angle SQR = 7:5$. The measure of $\angle SQR$ is (a) $(b)(c)(d)(e)60^{(f)0(g)}(h)(i)$ (j) (b) $(k)(l)62(m)(n)(o)\frac{1}{p}2(q)(r)^{(s)0(t)}(u)(v)$ (w) (c) $(d)(e)67(f)(g)(h)\frac{1}{i}2(j)(k)^{(l)0(m)}(n)(o)$ (p) (d) $(q)(r)(s)(t)75^{(u)0(v)}(w)(x)$ (y)

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91. The sum of an angle and half of its complementary angle is 75^0. The measure of the angle is (a) $(b)(c)(d)(e)40^{(f)0(g)}(h)(i)$ (j) (b) $(k)(l)(m)(n)50^{(o)0(p)}(q)(r)$ (s) (c) $(d)(e)(f)(g)60^{(h)0(i)}(j)(k)$ (l) (d) $(m)(n)(o)(p)80^{(q)0(r)}(s)(t)$ (u)

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92. $\angle A$ is an obtuse angle. The measure of $\angle A$ and twice its supplementary differ by 30^0. Then, $\angle A$ can be (a)

$(b)(c)(d)(e)150^{(f)0(g)}(h)(i)$ (j) (b) $(k)(l)(m)(n)110^{(o)0(p)}(q)(r)$ (s) (c) $(d)(e)(f)(g)140^{(h)0(i)}(j)(k)$ (l) (d) $(m)(n)(o)(p)120^{(q)0(r)}(s)(t)$ (u)

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93. An angle is double of its supplement. The measure of the angle is (a) $(b)(c)(d)(e)60^{(f)0(g)}(h)\ (i)$ (j) (b) $(k)(l)(m)(n)120^{(o)0(p)}(q)(r)$ (s) (t) *[Math Processing Error]* (cc) (d) $(dd)(ee)(ff)(gg)80^{(hh)0(ii)}(jj)(kk)$ (ll)

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94. The measure of an angle which is its own complement is (a) $(b)(c)(d)(e)30^{(f)0(g)}(h)(i)$ (j) (b) $(k)(l)(m)(n)60^{(o)0(p)}(q)(r)$ (s) (c) $(d)(e)(f)(g)90^{(h)0(i)}(j)(k)$ (l) (d) $(m)(n)(o)(p)45^{(q)0(r)}(s)(t)$ (u)

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95. Two supplementary angles are in the ratio $3:2$. The smaller angle measures (a) $(b)(c)(d)(e)108^{(f)0(g)}(h)(i)$ (j) (b) $(k)(l)(m)(n)81^{(o)0(p)}(q)(r)$ (s) (c) $(d)(e)(f)(g)72^{(h)0(i)}(j)(k)$ (l) (d) $(m)(n)(o)(p)68^{(q)0(r)}(s)(t)$ (u)

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96. In Fig.89, the value of x is (a) 75 (b) 65 (c) 45 (d) 55

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97. In Fig.90, AOB is a straight line and the ray OC stands on it. The value of x is (a) 16 (b) 26 (c) 36 (d) 46

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98. In Fig. 91, AOB is a straight line and $4x = 5y$. The value of x is (a) 100 (b) 105 (c) 110 (d) 115

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99. In Fig.92, AOB is a straight line such that $\angle AOC = (3x + 10)^0$, $\angle COD = 50^0$ and $\angle BOD = (x - 8)^0$. The value of x is (a) 32 (b) 36 (c) 42 (d) 52

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100. In Fig.93, if AOC is a straight line, then $x =$ (a) $(b)(c)(d)(e)42^{(f)0(g)}(h)(i)$ (j) (b) $(k)(l)(m)(n)52^{(o)0(p)}(q)(r)$ (s) (c) $(d)(e)(f)(g)142^{(h)0(i)}(j)(k)$ (l) (d) $(m)(n)(o)(p)38^{(q)0(r)}(s)(t)$ (u)

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101. In Fig.94, if $\angle AOC$ is a straight line, then the value of x is (a) 15 (b) 18 (c) 20 (d) 16

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102. In Fig.95, If $AB,\ CD\ and\ EF$ are straight lines, then $x =$ (a) 5 (b) 10 (c) 20 (d) 30

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103. In Fig.96, If $AB,\ CD\ and\ EF$ are straight lines, then $x + y + z =$ (a) 180 (b) 203 (c) 213 (v) 134

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104. In Fig.97, If AB is parallel to CD, then the value of $\angle BPE$ is (a) $(b)(c)(d)(e)106^{(f)0(g)}(h)(i)$ (j) (b) $(k)(l)(m)(n)76^{(o)0(p)}(q)(r)$ (s) (c)

$(d)(e)(f)(g)74^{(h)0(i)}(j)(k)$ (l) (d) $(m)(n)(o)(p)84^{(q)0(r)}(s)(t)$ (u)

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105. In Fig.98, If AB is parallel to CD and EF is a transversal, then $x =$ (a) 19 (b) 29 (c) 39 (d) 49

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106. In Fig.99, $ABCD\ and\ EF$ is a transversal intersecting AB and CD at P and Q respectively. The measure of $\angle DPQ$ is (a) $(b)(c)(d)(e)100^{(f)0(g)}(h)(i)$ (j) (b) $(k)(l)(m)(n)80^{(o)0(p)}(q)(r)$ (s) (c) $(d)(e)(f)(g)110^{(h)0(i)}(j)(k)$ (l) (d) $(m)(n)(o)(p)70^{(q)0(r)}(s)(t)$ (u)

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107. In Fig.100, $ABCD\ and\ EF$ is a transversal intersecting AB and CD at P and Q respectively. The measure of $\angle DOP$ is (a) 65 (b) 25 (c) 115 (d) 105

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108. In Fig.101, $ABCD\ and\ EF$ is a transversal. The value of $y - x$ is (a) 30 (b) 35 (c) 95 (d) 25

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109. In Fig.102, $ABCDEF$, $\angle ABG = 110^0$, $\angle GCD = 100^0$ and $\angle BGC = x^0$. the value of x is (a) 35 (b) 50 (c) 30 (d) 40

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110. In Fig.103, $PQRS\ and\ \angle PAB = 60^0\ and\ \angle ACS = 100^0$. Then, $\angle BAC =$ (a) $(b)(c)(d)(e)40^{(f)0(g)}(h)(i)$ (j) (b) $(k)(l)(m)(n)60^{(o)0(p)}(q)(r)$ (s) (c) $(d)(e)(f)(g)80^{(h)0(i)}(j)(k)$ (l) (d) $(m)(n)(o)(p)50^{(q)0(r)}(s)(t)$ (u)

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111. In Fig.104, $ABCD$, $\angle OAB = 150^0$ and $\angle OCD = 120^0$. Then, $\angle AOC =$ (a) $(b)(c)(d)(e)80^{(f)0(g)}(h)(i)$ (j) (b) $(k)(l)(m)(n)90^{(o)0(p)}(q)(r)$ (s) (c) $(d)(e)(f)(g)70^{(h)0(i)}(j)(k)$ (l) (d) $(m)(n)(o)(p)100^{(q)0(r)}(s)(t)$ (u)

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112. In Fig.105, If AOB and COD are straight lines. Then $x + y =$ (a) 120 (b) 140 (c) 100 (d) 160

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113. In Fig.106, the value of x is (a) 22 (b) 20 (c) 21 (d) 24

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114. In Fig.107, If $AOB\ and\ COD$ are straight lines, then (a) $(b)(c)x = 29,\ y = 100(d)$ (e) (b) $(f)(g)x = 100,\ y = 29(h)$ (i) (c) $(d)(e)x = 29,\ y = 110(f)$ (g) (d) $(h)(i)x = 39,\ y = 110(j)$ (k)

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115. In Fig.108, if $ABCD$ then the value of x is (a) 87 (b) 93 (c) 147 (d) 141

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116. In Fig.109, If $ABCD$ then the value of x is (a) 34 (b) 124 (c) 24 (d) 158

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117. In Fig.110, If $ABCD$. The value of x is (a) 122 (b) 238 (c) 58 (d) 119

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118. In Fig.111, if $ABCD$ then $x =$ (a) 154 (b) 139 (c) 144 (d) 164

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119. In Fig.112, if $ABCD,$ then $x =$ (a) 32 (b) 42 (c) 52 (d) 31

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120. In Fig.113, if $ACDF \; and \; ABCE,$ then (a) $(b)(c)x = 145, \; y = 223(d)$ (e) (b) $(f)(g)x = 223, \; y = 145(h)$ (i) (c) $(d)(e)x = 135, \; y = 223(f)$ (g) (d) $(h)(i)x = 233, \; y = 135(j)$ (k)

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