



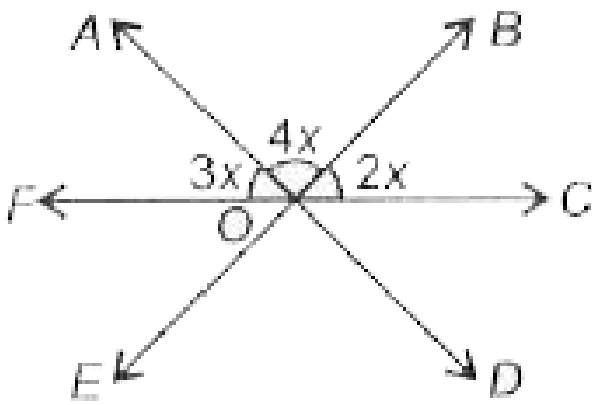
MATHS

BOOKS - HT Olympiad Previous Year Paper

LINES AND ANGLES

Mathematical Reasoning

1. In the given figure (not drawn to scale), find the value of $\angle DOC$



A. 50°

B. 60°

C. 30°

D. 75°

Answer: B



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2. If the angles of a triangle are in the ratio 3:4:5, then the triangle formed will be

- A. Right angled triangle
- B. Isosceles triangle
- C. Scalene triangle
- D. Obtuse angled triangle

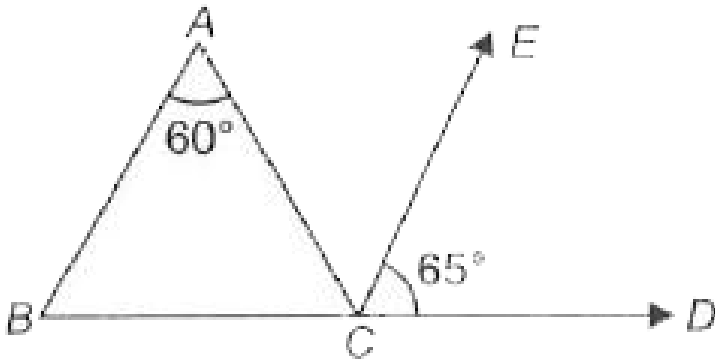
Answer: C



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3. In the given figure (not drawn to scale), if

$CE \parallel BA$, then the value of $\angle ACB$ is



A. 60°

B. 55°

C. 70°

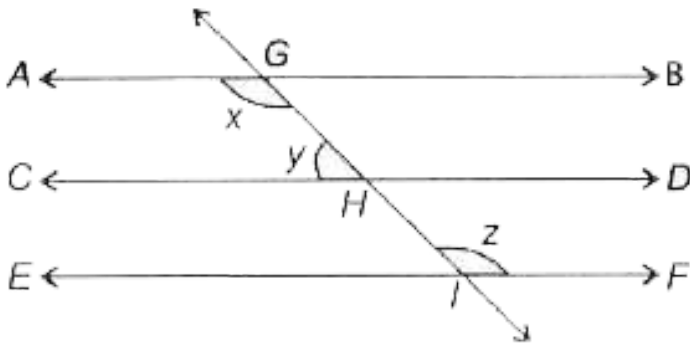
D. 90°

Answer: B



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4. In figure (not drawn to scale), if $AB \parallel CD$, $CD \parallel EF$ and $y : z = 4 : 5$, then find the value of x



A. 100°

B. 76°

C. 82°

D. 122°

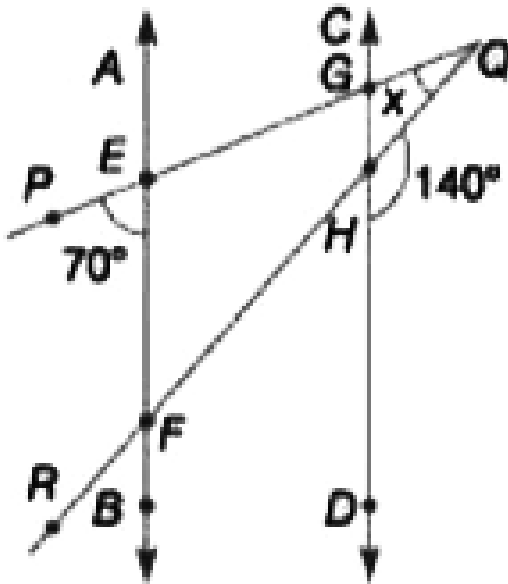
Answer: A



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5. In the figure $AB \parallel CD$ and PQ, QR intersects AB and CD both at E, F , and G, H respectively. If $\angle PQR = x$, then find the value of x (in

degrees).



A. 40°

B. 20°

C. 100°

D. 30°

Answer: B



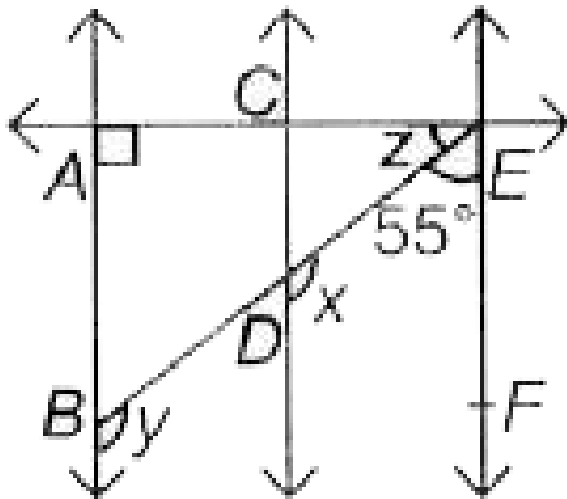
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6. In the given figure (not drawn to scale),

$AB \parallel CD$ and $AB \parallel EF$. If

$EA \perp BA$ and $\angle BEF = 55^\circ$, then the

values of x , y and z respectively are _____



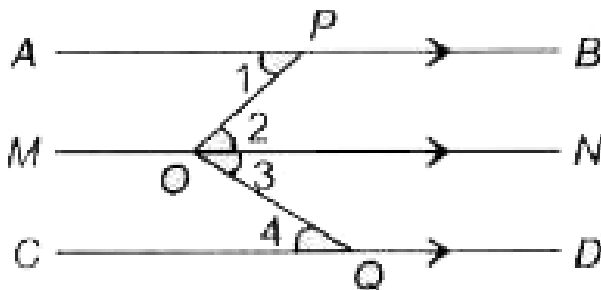
- A. 130° , 50° , 40°
- B. 125° , 125° , 35°
- C. 125° , 35° , 35°
- D. 35° , 150° , 35°

Answer: B



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7. In the given figure (not drawn to scale), $\angle APO = 42^\circ$ and $\angle CQO = 38^\circ$. Find the value of $\angle POQ$.



A. 68°

B. 72°

C. 80°

D. 126°

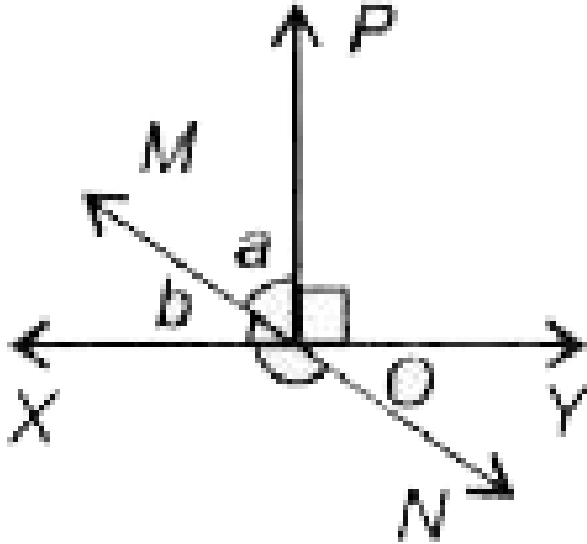
Answer: C



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8. In the given figure (not drawn to scale), lines XY and MN intersect at O . If $\angle POY = 90^\circ$ and $a : b = 2 : 3$, then $\angle XON$

is equal to _____



A. 126°

B. 130°

C. 90°

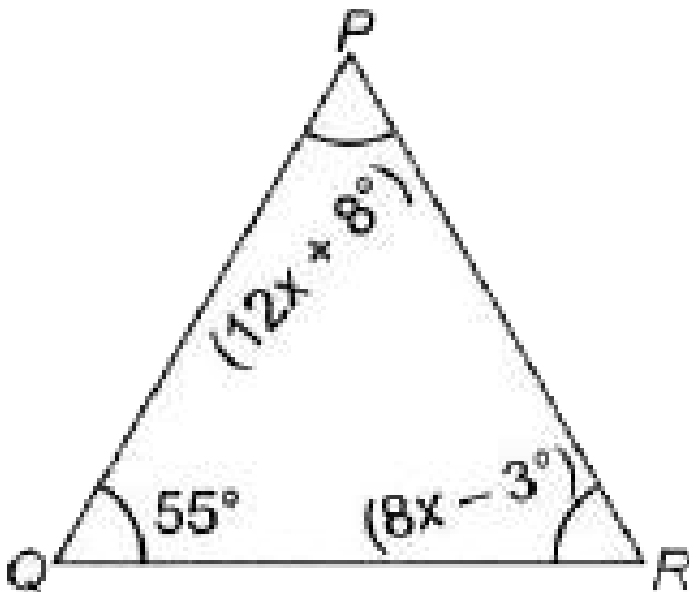
D. 180°

Answer: A



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9. The value of x , in the given triangle is ____



A. 4°

B. 5°

C. 6°

D. 8°

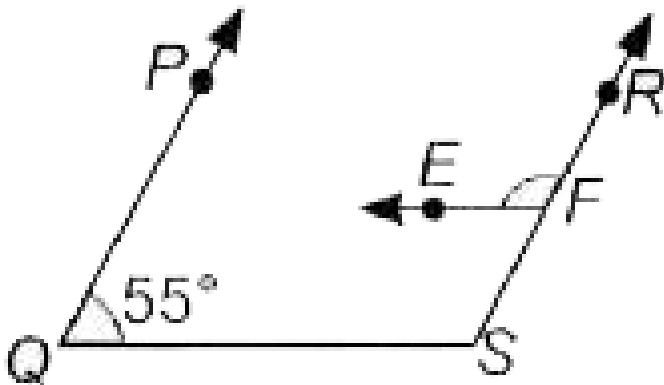
Answer: C



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10. In the given figure (not drawn to scale),
 $PQ \parallel RS$ and $EF \parallel QS$. If $\angle PQS = 55^\circ$, then

the measure of $\angle RFE$ is



A. 115°

B. 125°

C. 60°

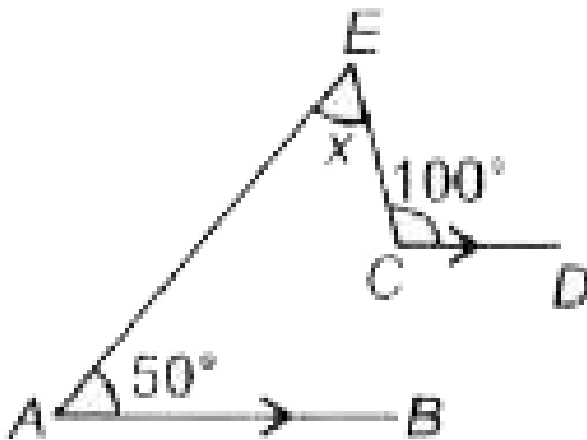
D. 180°

Answer: B



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11. In the given figure (not drawn to scale),
 $AB \parallel DC$. Then the value of x is ____



A. 25°

B. 30°

C. 45°

D. 50°

Answer: D



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12. Two angles measure $(25^\circ - a)$ and $(135^\circ + 2a)$. If each one is the supplement of the other, then the value of a is

A. 45°

B. 35°

C. 20°

D. 65°

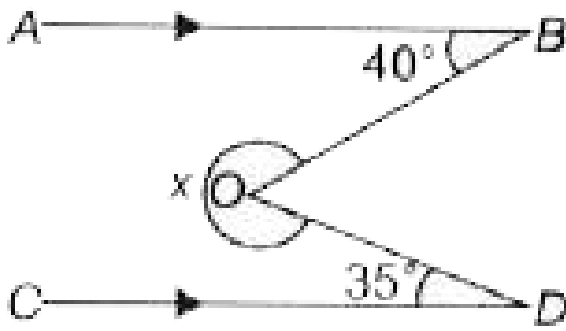
Answer: C



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13. In the given figure (not drawn to scale),

$AB \parallel CD$. Find the value of x .



A. 189°

B. 215°

C. 285°

D. 280°

Answer: C



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14. If two complementary angles are in the ratio 7:11, then the angles are ____

A. 30° , 50°

B. 40° , 50°

C. 20° , 60°

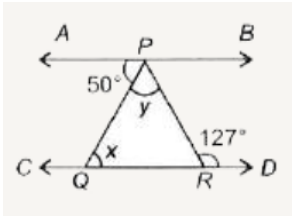
D. 35° , 55°

Answer: D



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15. In the given figure (not drawn to scale), if $AB \parallel CD$, then x and y respectively are _____



A. $40^\circ, 30^\circ$

B. $50^\circ, 77^\circ$

C. $30^\circ, 45^\circ$

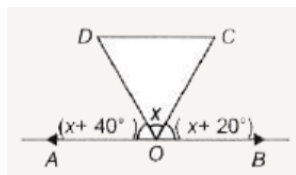
D. $90^\circ, 30^\circ$

Answer: B



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16. In the given figure (not drawn to scale), if OCD is an isosceles triangle in which OD and OC are equal, then what will be the value of $\angle OCD$?



A. 70°

B. 50°

C. 65°

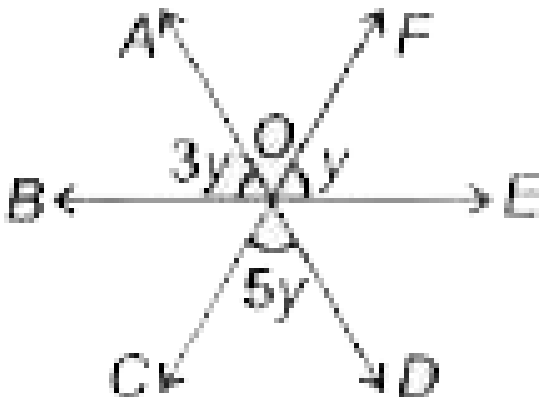
D. 45°

Answer: A



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17. In the given figure (not drawn to scale), the value of y is _____



A. 24°

B. 22°

C. 20°

D. 10°

Answer: C



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Achievers Section Hots

1. Fill in the blanks

(a) Angles forming a linear pair are ____ (P)

angles.

(b) The angle between the bisectors of the two acute angles of a right-angled triangle is of measure ____ (Q)

(c) Sum of interior angles of a quadrilateral is ____ (R)

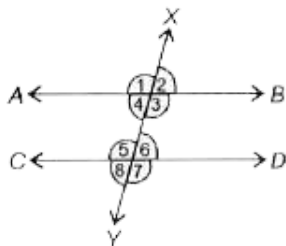
- | | | | |
|----|---------------------------|-------------------------|-------------------------|
| A. | <i>P</i>
Supplementary | <i>Q</i>
135° | <i>R</i>
360° |
| B. | <i>P</i>
Complementary | <i>Q</i>
135° | <i>R</i>
720° |
| C. | <i>P</i>
Supplementary | <i>Q</i>
90° | <i>R</i>
180° |
| D. | <i>P</i>
Complementary | <i>Q</i>
90° | <i>R</i>
360° |

Answer: A



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2. Use the given figure to match Column-I with Column-II, if $AB \parallel CD$.



	Column-I	Column-II
(P)	Corresponding angles	(1) $\angle 1 = \angle 7$
(Q)	Alternate interior angles	(2) $\angle 4 + \angle 5 = 180^\circ$
(R)	Alternate exterior angles	(3) $\angle 1 = \angle 5$
(S)	Co-interior angles	(4) $\angle 4 = \angle 6$

A. $\begin{matrix} P & Q & R & S \\ 4 & 1 & 2 & 3 \end{matrix}$

B. P Q R S
3 2 4 1

C. P Q R S
4 2 1 3

D. P Q R S
3 4 1 2

Answer: D



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3. Which of the following statements is
CORRECT?

- A. If two angles forming a linear pair, then each of these angle is of measure 90°
- B. Angles forming a linear pair can both be acute angles.
- C. Both of the angles forming a linear pair can be obtuse angles.
- D. Bisectors of the adjacent angles forming a linear pair form a right angle.

Answer: D



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