

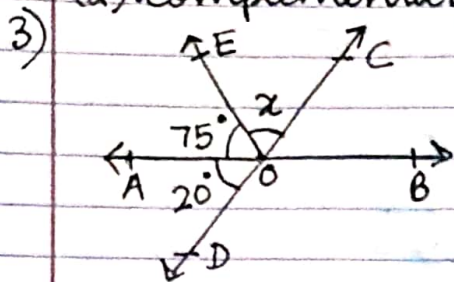
IX Elite work - 9 (MCQs - Lines and Angles)

1) If the difference between two complementary angles is  $12^\circ$ , then the greater angle is:

- (a)  $46^\circ$  (b)  $48^\circ$  (c)  $49^\circ$  (d)  $51^\circ$

2) If the sum of two given angles is  $180^\circ$ , then the two angles are:

- (a) acute angles (b) right angles (c) supplementary angles (d) complementary angles.



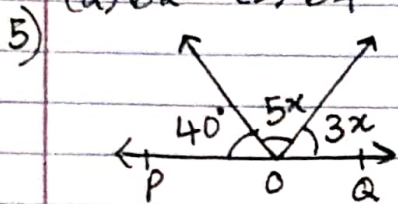
The value of  $x$  is

- (a)  $85^\circ$  (b)  $60^\circ$  (c)  $55^\circ$  (d)  $50^\circ$

4) Angles  $x$  and  $y$  form a linear pair such that

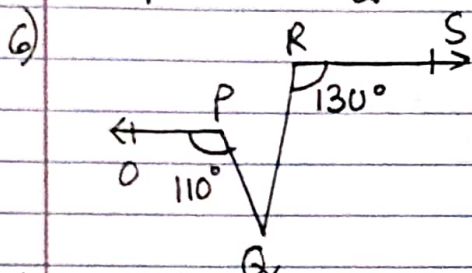
$x + 2y = 254^\circ$ , then value of  $y$  is

- (a)  $62^\circ$  (b)  $64^\circ$  (c)  $70^\circ$  (d)  $74^\circ$



PQ is a straight line. The value of  $x =$

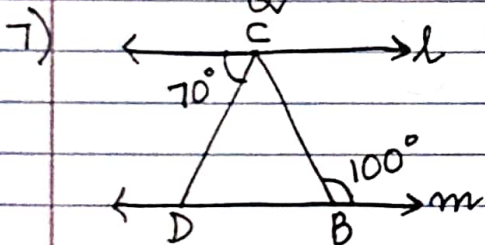
- (a)  $16^\circ$  (b)  $17.5^\circ$  (c)  $19.5^\circ$  (d)  $21^\circ$



$\angle OPQ = 110^\circ$ ,  $\angle QRS = 130^\circ$ ,  $OP \parallel RS$

then  $\angle PQR$  is

- (a)  $40^\circ$  (b)  $45^\circ$  (c)  $50^\circ$  (d)  $60^\circ$



If  $l \parallel m$ , then  $\angle BCD$  is

- (a)  $30^\circ$  (b)  $28^\circ$  (c)  $25^\circ$  (d)  $20^\circ$

8) If two interior angles on the same side of a transversal intersecting two parallel lines are in the ratio  $2:3$ , then the greater angle is

- (a)  $60^\circ$  (b)  $75^\circ$  (c)  $80^\circ$  (d)  $108^\circ$

9) An exterior angle of a  $\Delta$  is  $105^\circ$  and its two interior opposite angles are equal. Each of these equal angles is

(a)  $52\frac{1}{2}^\circ$  (b)  $43\frac{1}{2}^\circ$  (c)  $65\frac{1}{2}^\circ$  (d)  $68\frac{1}{2}^\circ$

10) The angles of a triangle are in the ratio 5:3:7.

The triangle is :

(a) a right triangle (b) an isosceles triangle  
(c) an obtuse triangle (d) an acute angled triangle.

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IX Elite work-9 (Lines and Angles - answers)

1) Let the complementary angles be  $x^\circ$  and  $90-x^\circ$ .

ATQ,  $x - (90 - x) = 12^\circ$

$x - 90 + x = 12^\circ$

$2x = 12^\circ + 90 = 102^\circ$

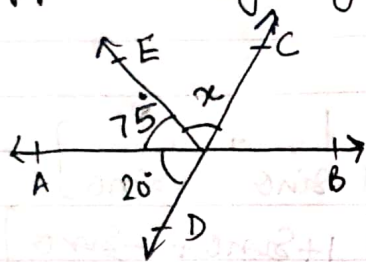
$x = 51^\circ$

and the other angle =  $90 - x = 90 - 51 = 39^\circ$

Hence, the greater angle is  $51^\circ$  (d)

2) Supplementary angles (c)

3)



Since CD is a straight line,  $75^\circ + x + 20^\circ = 180^\circ$

[angles on a straight line]

$\Rightarrow x = 180 - 95 = 85^\circ$  (a)

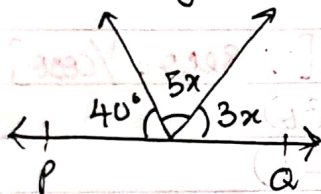
4)  $x + y = 180^\circ$  [linear pair]  $\rightarrow$  (1)

$x + 2y = 254^\circ$  [given]  $\rightarrow$  (2)

(1) - (2),  $-y = -74$

$y = 74$  (d)

5)

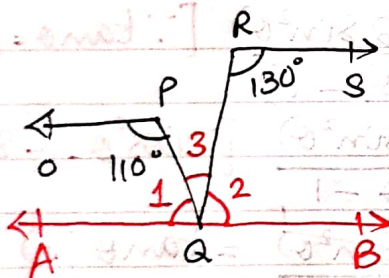


$40^\circ + 5x + 3x = 180^\circ$  [angles on a straight line]

$8x = 140^\circ$

$x = 17.5^\circ$  (b)

6)



Construction: draw  $AB \parallel OP \parallel RS$   
 $\angle 1 = 180^\circ - 110^\circ = 70^\circ$  (co-interior angles)

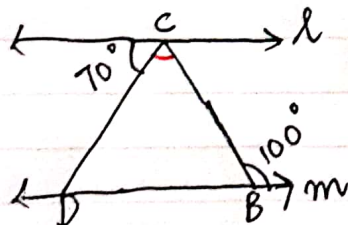
$\angle 2 = 180^\circ - 130^\circ = 50^\circ$  (co-interior angles)

$\therefore \angle 1 + \angle 3 + \angle 2 = 180^\circ$  (angles on a straight line)

$\angle 3 = 180^\circ - 70^\circ - 50^\circ = 180^\circ - 120^\circ$

$= 60^\circ$  (d)

7)



Since  $l \parallel m$ ,  $70^\circ + \angle BCD = 100^\circ$  [alternate interior angles]  
 $\angle BCD = 30^\circ$  (a)

8) Let the angles be  $2x$  and  $3x$ .

Then,  $2x + 3x = 180^\circ$  (co-interior angles)

$$5x = 180^\circ$$

$$x = \frac{180^\circ}{5} = 36^\circ$$

$\therefore$  The angles are  $2x = 72^\circ$

$$3x = 3 \times 36^\circ = 108^\circ$$

Hence, the greater angle =  $108^\circ$  (d)

9) Let each interior angle be  $x$ .

Using exterior angle property,

$$x + x = 105^\circ$$

$$2x = 105^\circ$$

$$x = \frac{105^\circ}{2} = 52\frac{1}{2}^\circ \text{ (a)}$$



10) Let the angles be  $5x$ ,  $3x$  and  $7x$ .

Then, using angle sum property,

$$5x + 3x + 7x = 180^\circ$$

$$15x = 180^\circ$$

$$x = \frac{180^\circ}{15} = 12^\circ$$

$\therefore$  The angles are  $5 \times 12^\circ = 60^\circ < 90^\circ$

$$3 \times 12^\circ = 36^\circ < 90^\circ$$

$$7 \times 12^\circ = 84^\circ < 90^\circ$$

an acute angled  $\Delta$  (d)

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