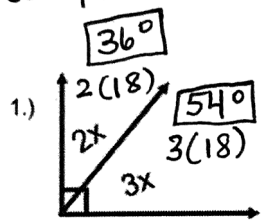
Aim: What are parallel lines and transversals?

Do Now: Find the value of the missing angles and state the angle relationship.

Complementary

1.)



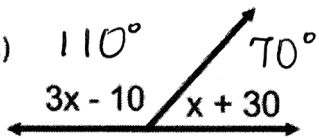
$2x + 3x = 90$

$5x = 90$

$x = 18$

supplementary

2.)



$3x - 10 + x + 30 = 180$

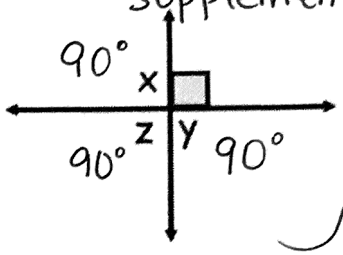
$4x + 20 = 180$

$4x = 160$

$x = 40$

vertical ∠'s
supplementary ∠'s

3)



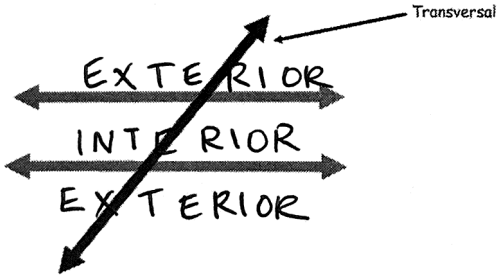
perpendicular lines

Parallel Lines: Two lines are parallel if they are in the same plane and never intersect

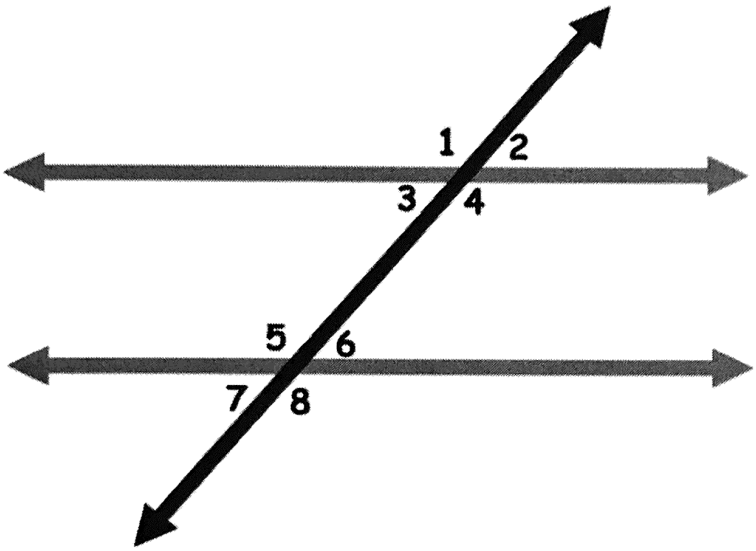
Transversal: A line that intersects 2 or more lines.

Interior: Between the parallel lines

Exterior: Outside the parallel lines



Two parallel lines cut by a transversal will form EIGHT different angles.



EXTERIOR ANGLES:
1, 2, 7, 8

INTERIOR ANGLES:
3, 4, 5, 6

ACUTE ANGLES:
2, 3, 6, 7

OBTUSE ANGLES:
1, 4, 5, 8

Alternate Interior Angles: Two nonadjacent interior angles on opposite sides of the transversal
3 and 6
4 and 5
EQUAL

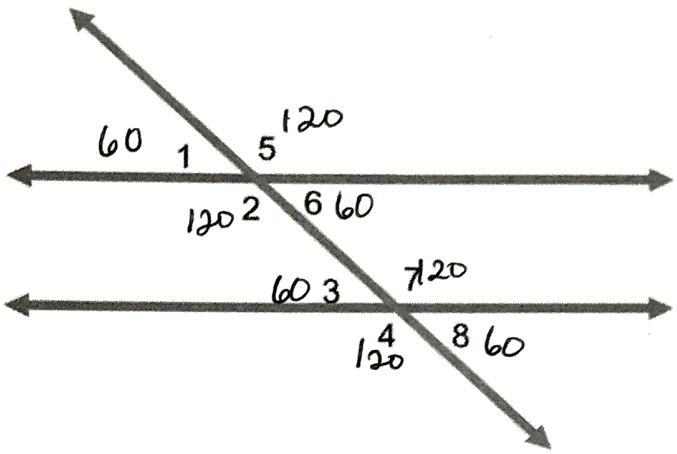
Alternate Exterior Angles: Two nonadjacent exterior angles on opposite sides of the transversal
1 and 8
2 and 7
EQUAL

Corresponding Angles: angles in the same relative location
1 and 5
2 and 6
3 and 7
4 and 8
EQUAL

All acute angles $\cong$
All obtuse angles $\cong$
acute + obtuse = 180

1.) Name all pairs of **alternate interior angles.** 2 and 7
6 and 3

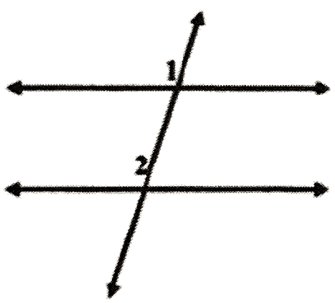
2.) Name all pairs of **alternate exterior angles.** 1 and 8
5 and 4



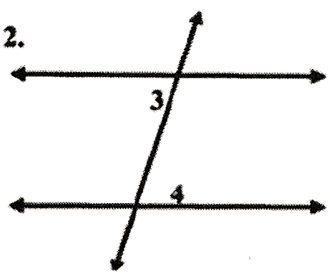
3.) Name all pairs of **corresponding angles.**
1 and 3
2 and 4
5 and 7
6 and 8

4.) If the measure of <1 is 60°, what is the measure of <4, <5 and <7?

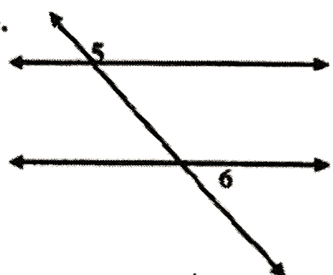
Identify the angles as corresponding, alternate interior or alternate exterior.

1.


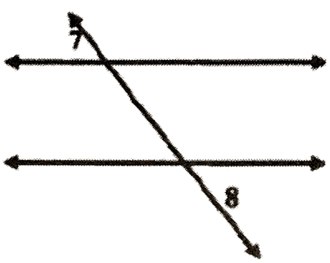
C

2.


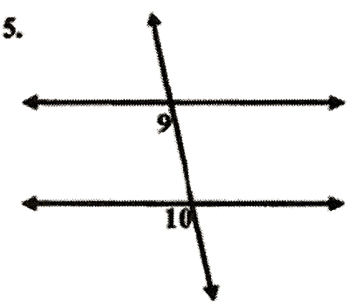
AI

3.


Supplementary

4.


AE

5.


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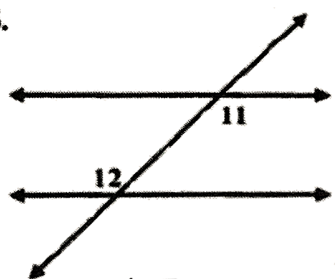


AI

Line x is parallel to line y. Find all the missing angles, if m < 8 = 125°

m <1 = 55

m <2 = 125

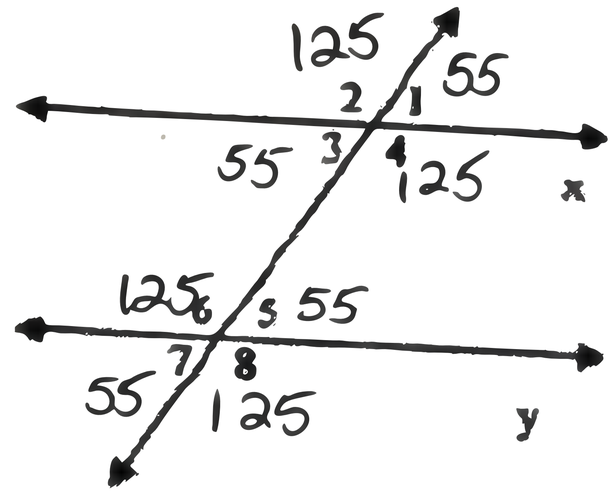
m <3 = 55

m <4 = 125

m <5 = 55

m <6 = 125

m <7 = 55



Line m is parallel to line m. Find all the missing angles, if m < 2 = 62°

m <1 = 118

m <3 = 118

m <4 = 62

m <5 = 62

m <6 = 62

m <7 = 118

m <8 = 62