

Lines & Angles

Foundation to Challenge

Practice should make the test feel easier, not merely familiar.

Work without the answer key first. Check answers through the SAT Practice Library after completing the set.

FOUNDATION

- 1 A triangle has exterior angles 110° and 140° at two base vertices. What is the third interior angle?

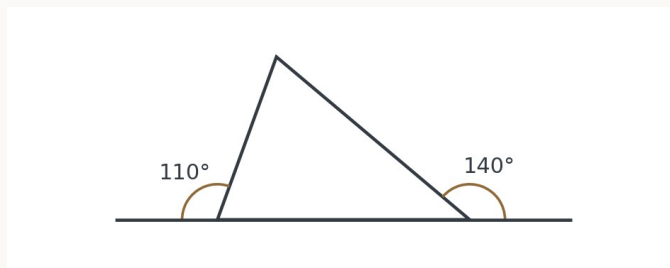


Diagram not drawn to scale.

- 2 Two parallel lines are cut by a transversal. If one acute angle is 38° , what is its corresponding angle?

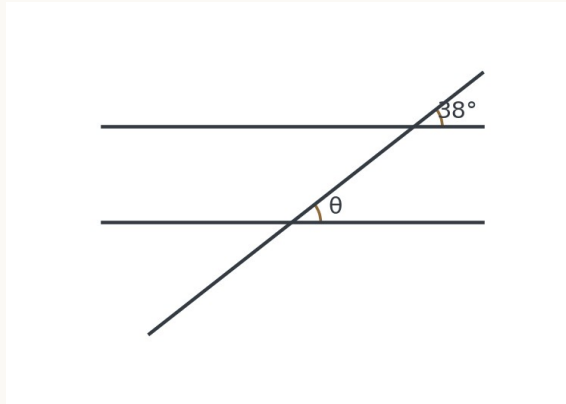


Diagram not drawn to scale.

- 3 A triangle has one interior angle 52° and an exterior angle of 133° at another vertex. What is the remaining interior angle?

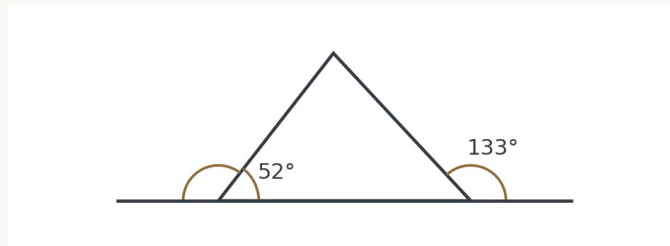


Diagram not drawn to scale.

- 4 A triangle has angles 55° , 65° , and y° . What is y ?

- A. 50
- B. 60
- C. 70
- D. 80

STANDARD

5 A triangle has angles x° , y° , and $(x + y)^\circ$. If $x = 35^\circ$, what is y ?

- A. 35
- B. 55
- C. 72.5
- D. 90

FOUNDATION

6 In a quadrilateral, the four interior angles are a° , b° , 100° , and 120° . What is $a + b$?

- A. 120
- B. 140
- C. 160
- D. 180

7 Two intersecting lines form vertical angles of $3z + 5$ and $5z - 35$ degrees. What is z ?

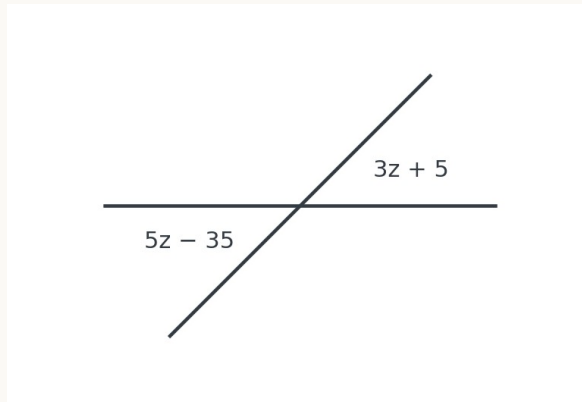


Diagram not drawn to scale.

STANDARD

- 8 Two transversals form a triangle. Two exterior angles are 125° and 140° . What is the third interior angle?

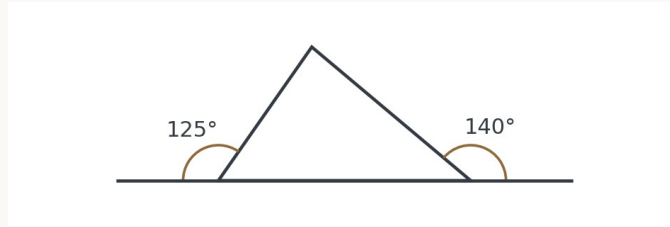


Diagram not drawn to scale.

- 9 Three lines meet at a point. Adjacent angles around a straight line are $2a$, $3a$, and $4a$. What is a ?

- A. 15
- B. 18
- C. 20
- D. 25

FOUNDATION

- 10 What is each exterior angle of a regular decagon?

ADVANCED

- 11 In a regular octagon, the segment from a vertex to the center bisects that vertex angle. What is the angle between this segment and either adjacent side?

- A. 15
- B. 22.5
- C. 45
- D. 67.5

- 12** Lines l, m, n are parallel. One transversal makes a 42° acute angle with l ; another makes a 58° acute angle with m on the opposite side. What is the obtuse angle between the transversals?

STANDARD

- 13** B, O, and C lie on a straight line, with O between B and C. Ray l bisects $\angle AOB$ and ray m bisects $\angle AOC$. What is the angle between rays l and m ?

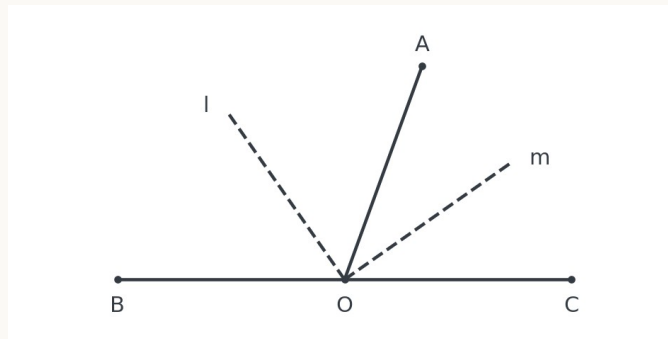


Diagram not drawn to scale.

- A. 75
 B. 90
 C. 105
 D. 120
- 14** On a straight line, x° , 90° , and y° are adjacent. If $y:x = 4:3$, what is x to the nearest tenth of a degree?

- A. 30
 B. 36
 C. 38.6
 D. 45

ADVANCED

- 15 Around a point, five equal angles a and four equal angles b fill 360° . If $5a = 4b$, what is $\frac{b-a}{b+a}$?

STANDARD

- 16 Three adjacent angles on a straight line are a, b, c with $a:b = 2:3$ and $b:c = 3:5$. What is the largest angle?

ADVANCED

- 17 A, B, C are collinear with B between A and C. M and N are midpoints of AB and BC. If $AB:BC = 5:2$, what is $AB:MN$?



Diagram not drawn to scale.

FINISHED?

Check your answers online

aryalanupme.github.io/sat-lines-angles.html

Do not stop at “wrong.” Identify why it was wrong: concept, algebra, arithmetic, interpretation, calculator choice, or timing.

I do not correct the answer first. I correct the reason.

Independent SAT-style practice. Not affiliated with or endorsed by College Board.