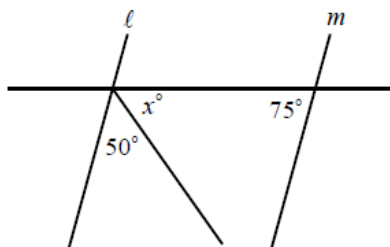


Practice Test

Lines and Angles

1

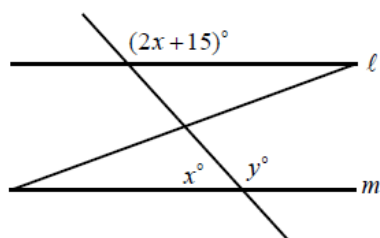


Note: Figure not drawn to scale.

In the figure above, $\ell \parallel m$. What is the value of x ?

- A) 45
- B) 50
- C) 55
- D) 60

2

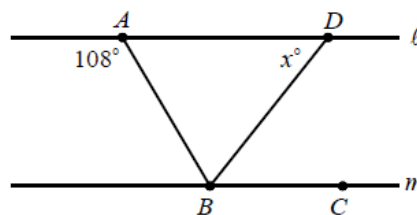


Note: Figure not drawn to scale.

In the figure above, $\ell \parallel m$. What is the value of y ?

- A) 120
- B) 125
- C) 130
- D) 135

3

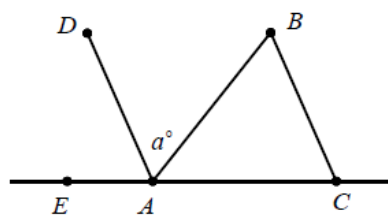


Note: Figure not drawn to scale.

In the figure above, lines ℓ and m are parallel and \overline{BD} bisects $\angle ABC$. What is the value of x ?

- A) 54
- B) 60
- C) 68
- D) 72

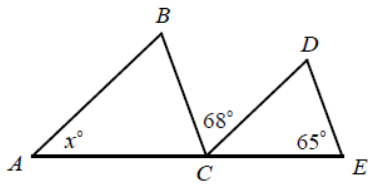
4



In the figure above, $\overline{DA} \parallel \overline{BC}$ and \overline{AB} bisects $\angle DAC$. What is the measure of $\angle BCA$ in terms of a ?

- A) $180 - a$
- B) $2a - 180$
- C) $180 - 2a$
- D) $2a - 90$

5

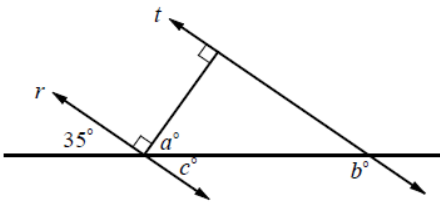


Note: Figure not drawn to scale.

In the figure above, $\overline{AB} \parallel \overline{CD}$ and $\overline{BC} \parallel \overline{DE}$.
What is the value of x ?

- A) 47
- B) 51
- C) 55
- D) 57

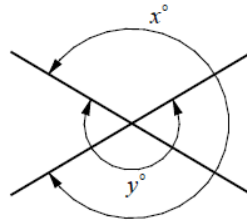
6



In the figure above, $r \parallel t$. What is the value of $a + b$?

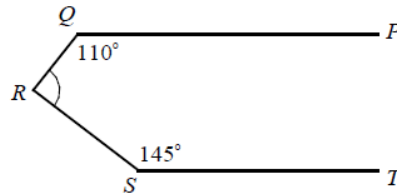
- A) 160
- B) 175
- C) 185
- D) 200

7



In the figure above, what is the value of $x + y$?

8

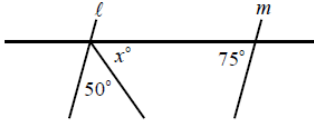


Note: Figure not drawn to scale.

In the figure above, \overline{PQ} is parallel to \overline{ST} .
What is the measure of $\angle QRS$?

Answers Lines and Angles

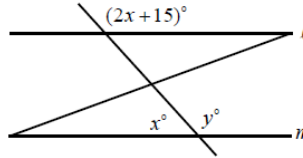
1. C



Note: Figure not drawn to scale.

$$\begin{aligned} 50 + x + 75 &= 180 && \text{If } \ell \parallel m, \text{ consecutive interior } \\ &&& \angle s \text{ are supplementary.} \\ 125 + x &= 180 && \text{Simplify.} \\ x &= 55 \end{aligned}$$

2. B

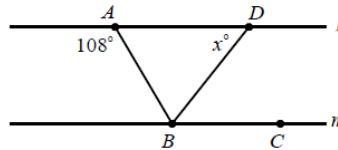


Note: Figure not drawn to scale.

$$\begin{aligned} y &= 2x + 15 && \text{If } \ell \parallel m, \text{ consecutive interior } \\ &&& \angle s \text{ are supplementary.} \\ x + y &= 180 && \text{Straight } \angle \text{ measures } 180. \\ x + (2x + 15) &= 180 && y = 2x + 15 \\ 3x + 15 &= 180 && \text{Simplify.} \\ 3x &= 165 \\ x &= 55 \end{aligned}$$

$$\text{Therefore, } y = 2x + 15 = 2(55) + 15 = 125.$$

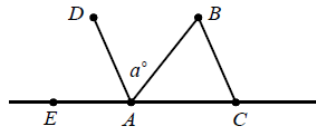
3. A



Note: Figure not drawn to scale.

$$\begin{aligned} m\angle ABC &= 108 && \text{If } \ell \parallel m, \text{ alternate interior } \\ &&& \angle s \text{ are } \cong. \\ m\angle DBC &= \frac{1}{2}m\angle ABC && \text{Definition of } \angle \text{ bisector} \\ m\angle DBC &= \frac{1}{2}(108) && m\angle ABC = 108 \\ m\angle DBC &= 54 && \text{Simplify.} \\ x &= m\angle DBC && \text{If } \ell \parallel m, \text{ alternate interior } \\ &&& \angle s \text{ are } \cong. \\ x &= 54 && m\angle DBC = 54 \end{aligned}$$

4. C



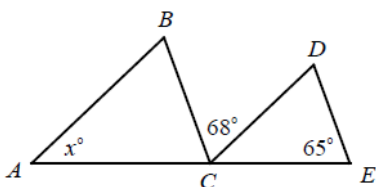
$$\begin{aligned} m\angle BAC &= m\angle DAB && \text{Definition of } \angle \text{ bisector} \\ m\angle BAC &= a && m\angle DAB = a \end{aligned}$$

$$\begin{aligned} \text{Since straight angles measure } 180, \\ m\angle DAE + m\angle DAB + m\angle BAC &= 180. \end{aligned}$$

$$\begin{aligned} m\angle DAE + a + a &= 180 && m\angle DAB = m\angle BAC = a \\ m\angle DAE &= 180 - 2a && \text{Subtract } 2a. \\ m\angle BCA &= m\angle DAE && \text{If } DA \parallel BC, \text{ corresponding } \\ &&& \angle s \text{ are } \cong. \\ m\angle BCA &= 180 - 2a && m\angle DAE = 180 - 2a \end{aligned}$$

Answers Lines and Angles

5. A



Note: Figure not drawn to scale.

$m\angle BCA = m\angle DEC$ If $DE \parallel BC$, corresponding

$\angle s$ are \cong .

$m\angle BCA = 65$

$m\angle DEC = 65$

$m\angle DCE = x$

If $AB \parallel CD$, corresponding

$\angle s$ are \cong .

Since straight angles measure 180,

$m\angle BCA + m\angle BCD + m\angle DCE = 180$.

$65 + 68 + x = 180$

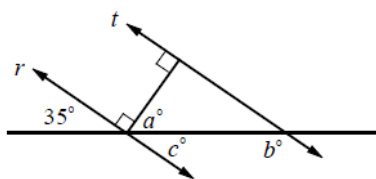
Substitution

$133 + x = 180$

Simplify.

$x = 47$

6. D



$c = 35$

Vertical $\angle s$ are \cong .

$a + c = 90$

$\angle a$ and $\angle c$ are complementary.

$a + 35 = 90$

$c = 35$

$a = 55$

$b + c = 180$

If $r \parallel t$, consecutive interior

$\angle s$ are supplementary.

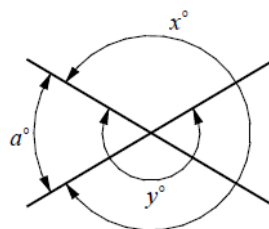
$b + 35 = 180$

$c = 35$

$b = 145$

Therefore, $a + b = 55 + 145 = 200$.

7. 540



Draw $\angle a$.

$x + a = 360$

360° in a circle.

$x = 360 - a$

Subtract a from each side.

$y - a = 180$

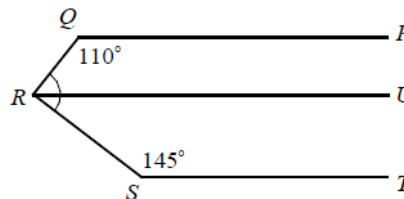
Straight \angle measures 180.

$y = 180 + a$

Add a to each side.

Therefore, $x + y = (360 - a) + (180 + a) = 540$.

8. 105



Note: Figure not drawn to scale.

Draw \overline{RU} , which is parallel to \overline{PQ} and \overline{ST} .

If two lines are parallel, then the consecutive interior angles are supplementary. Therefore,

$m\angle PQR + m\angle QRU = 180$ and

$m\angle RST + m\angle URS = 180$.

$110 + m\angle QRU = 180$ $m\angle PQR = 110$

$m\angle QRU = 70$ Subtract 110.

$145 + m\angle URS = 180$ $m\angle RST = 145$

$m\angle URS = 35$ Subtract 145.

By the Angle Addition Postulate,

$m\angle QRS = m\angle QRU + m\angle URS$.

Substituting 70 for $m\angle QRU$ and 35 for $m\angle URS$ gives $m\angle QRS = 70 + 35 = 105$.