

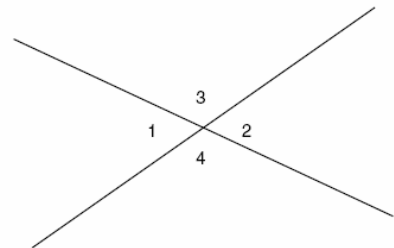
Section 7-2: Pairs of Angles

Supplementary Angles

Complementary Angles

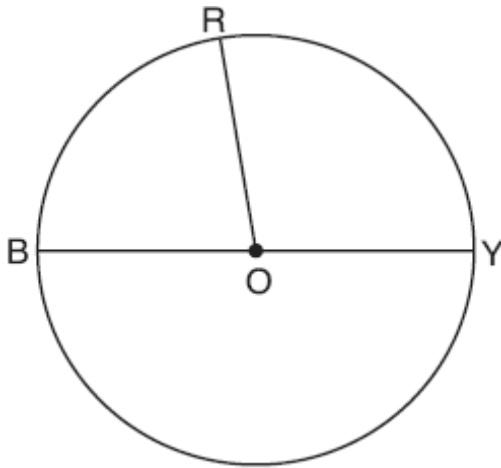
1. 010313a, 8.G.3
If the measure of an angle is represented by $2x$, which expression represents the measure of its complement?
[A] $90 + 2x$ [B] $88x$
[C] $180 - 2x$ [D] $90 - 2x$
2. 010823a, P.I. 8.G.3
Two angles are complementary. The measure of one angle is 15° more than twice the other. What is the measure of the *smaller* angle?
[A] 35° [B] 65° [C] 55° [D] 25°
3. 080431a, P.I. 8.G.3
Two angles are complementary. One angle has a measure that is five times the measure of the other angle. What is the measure, in degrees, of the larger angle?
4. 060621a, P.I. 8.G.3
The measures of two complementary angles are represented by $(3x + 15)$ and $(2x - 10)$. What is the value of x ?
[A] 35 [B] 19 [C] 37 [D] 17

5. 060414a, P.I. 8.G.3
The ratio of two supplementary angles is 2:7. What is the measure of the *smaller* angle?
[A] 10° [B] 14° [C] 40° [D] 20°
6. 010624a, P.I. 8.G.3
The ratio of two supplementary angles is 3:6. What is the measure of the *smaller* angle?
[A] 60° [B] 30° [C] 10° [D] 20°
7. 010128a, P.I. 8.A.12
In the accompanying figure, two lines intersect, $m\angle 3 = 6t + 30$, and $m\angle 2 = 8t - 60$. Find the number of degrees in $m\angle 4$.



8. 010836a, P.I. 8.G.3

In the accompanying diagram, \overline{BY} is a diameter of circle O , the measure of central angle ROY is $(x + 60)^\circ$, and the measure of central angle ROB is $(3x - 20)^\circ$. Find the number of degrees in the measure of central angle ROY .



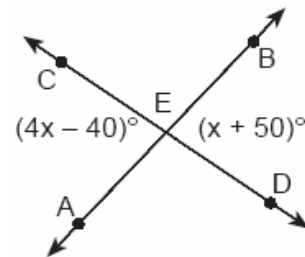
10. 080407a, P.I. 8.A.12

\overline{AB} and \overline{CD} intersect at point E ,
 $m\angle AEC = 6x + 20$, and $m\angle DEB = 10x$.
What is the value of x ?

- [A] 5 [B] 10 [C] $21\frac{1}{4}$ [D] $4\frac{3}{8}$

11. 010229a, P.I. 8.A.12

In the accompanying diagram, \overline{AB} and \overline{CD} intersect at E . If $m\angle AEC = 4x - 40$ and $m\angle BED = x + 50$, find the number of degrees in $\angle AEC$.



Vertical Angles

9. 060601a, P.I. 8.A.12

In the accompanying diagram, line a intersects line b .



What is the value of x ?

- [A] 10 [B] 5 [C] -10 [D] 90

12. 080638a, P.I. 8.A.12

\overline{AB} and \overline{CD} intersect at E . If
 $m\angle AEC = 5x - 20$ and $m\angle BED = x + 50$,
find, in degrees, $m\angle CEB$.

[1] D

[2] D

[2] 75, and appropriate work is shown.

[1] Appropriate work is shown, but one computational error is made.

or [1] An incorrect equation of equal difficulty, such as $x + 5x = 180$, is solved appropriately, and an appropriate angle measure is found.

or [1] A correct equation is written and solved for x , but no further correct work is shown.

or [1] 75, but no work is shown.

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously

[3] incorrect procedure.

[4] D

[5] C

[6] A

[3] 120, and appropriate work is shown, such as $6t + 30 + 8t - 60 = 180$.

[2] The student finds correctly the unknown, $t = 15$, but does not find the measure of angle 4.

or [2] Appropriate work is shown, but one computational error is made.

[1] The student forms an incorrect equation, such as setting the two angles equal, and arrives at $t = 45$ and an angle of 300.

or [1] 120, but no work is shown.

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously

[7] incorrect procedure.

[3] 95, and appropriate work is shown, such as $3x - 20 + x + 60 = 180$.

[2] Appropriate work is shown, but one computational error is made.

or [2] A correct equation is written and solved for x , but $m\angle ROY$ is not found.

[1] Appropriate work is shown, but two or more computational errors are made.

or [1] Appropriate work is shown, but one conceptual error is made, such as writing the equation $x + 60 = 3x - 20$, but an appropriate answer is found.

or [1] A correct equation is written, but no further correct work is shown,

or [1] 95, but no work is shown.

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously

[8] incorrect procedure.

[9] A

[10] A

[3] 80, and appropriate work is shown.

[2] $x = 30$ is shown, but the student fails to substitute to find $m\angle AEC$.

or [2] $x = 30$ is shown, but the student states that the answer is 100° , by finding the supplement of $\angle AEC$.

or [2] The student makes one computational error in the solution of the correct equation $4x - 40 = x + 50$ but appropriately substitutes the incorrect value to solve for $m\angle AEC$.

[1] The student makes one computational error in the solution of the correct equation $4x - 40 = x + 50$ and fails to substitute to find $m\angle AEC$.

or [1] The student makes more than one computational error in the solution of the correct equation $4x - 40 = x + 50$, but appropriately substitutes the incorrect value to solve for $m\angle AEC$.

or [1] 80, but no work is shown.

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously

[11] incorrect procedure.

[4] 112.5, and appropriate work is shown,
such as solving the equation $5x - 20 = x + 50$.

[3] Appropriate work is shown, but one
computational error is made.

or [3] $m\angle BED = 67.5$ or $m\angle AEC = 67.5$, but
no further correct work is shown.

[2] Appropriate work is shown, but two or
more computational errors are made.

or [2] Appropriate work is shown, but one
conceptual error is made, but an appropriate
measure for $\angle CEB$ is found.

or [2] A correct equation is written and solved
for x , but no further correct work is shown.

[1] Appropriate work is shown, but one
conceptual error and one computational error
are made.

or [1] 112.5, but no work is shown.

[0] A zero response is completely incorrect,
irrelevant, or incoherent or is a correct
response that was obtained by an obviously

[12] incorrect procedure.