Angle Measure as Additive

Spot mistakes, reason, and work backward

Name _____ **Date** _____ **Score** _____ / 6

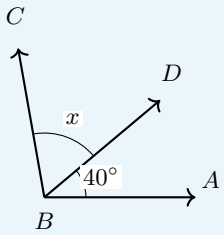
QUICK REVIEW

Adjacent, nonoverlapping angle parts add to the whole angle. If the whole is $95°$ and one part is $35°$, then $35 + x = 95$ and $x = 60°$. For a right angle the whole is $90°$; for a straight angle it is $180°$.

Worked example

Find the unknown part of the $100°$ angle.

1. The whole is $100°$ and one part is $40°$, so $40 + x = 100$.
2. Subtract the known part: $x = 100 - 40 = 60°$.
3. Check: $40 + 60 = 100°$, recovering the full angle.
Answer: $60°$.

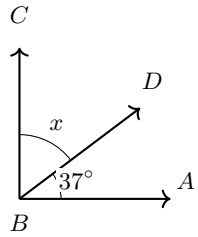


Whole angle $ABC = 100°$

Practice Problems

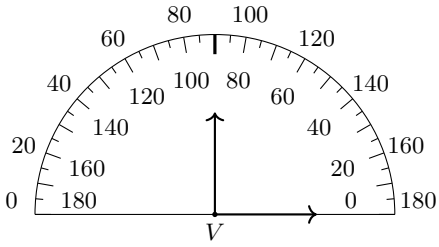
Show your thinking.

1. A student calls the missing right-angle part $127°$. Repair the result.



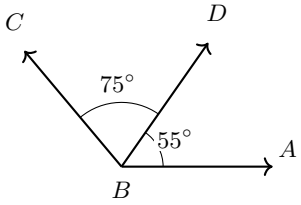
Whole angle $ABC = 90°$

2. Divide the right angle into 3 equal parts. Use the inner scale to draw two rays. Find each part.

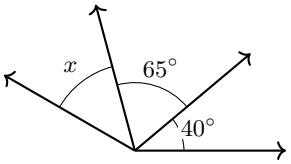


Inner: zero at right. Outer: zero at left.

3. Combine these adjacent, nonoverlapping parts; explain why they add.

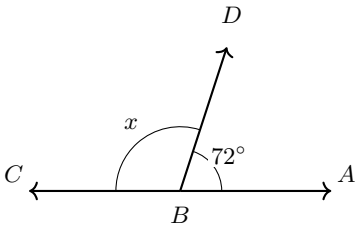


4. A $150°$ angle has three adjacent parts: $40°$, $65°$, and x. Find x.



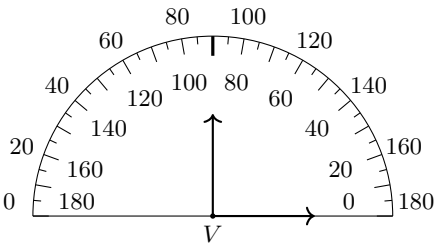
Whole angle: $150°$

5. A hinge can turn through a straight angle. Its first turn is $72°$. Find the rest.



Whole angle $ABC = 180°$

6. Draw a ray that splits the shown right angle into equal halves. Label both parts.



Inner: zero at right. Outer: zero at left.

Answer Key

1. $53°$.
2. Each part is $30°$; draw rays at $30°$ and $60°$.
3. $130°$.
4. $45°$.
5. $108°$.
6. $45°$ and $45°$.

Step-by-Step Solutions

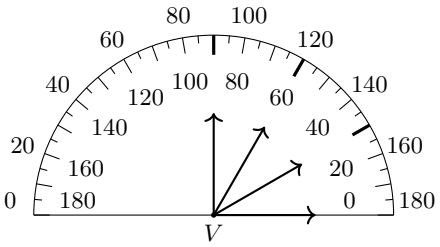
Follow each calculation, then check your own work.

Problem 1

1. The whole is $90°$ and one part is $37°$, so $37 + x = 90$.
2. Subtract the known part: $x = 90 - 37 = 53°$.
3. Check: $37 + 53 = 90°$, recovering the full angle.

Problem 2

1. The full opening is $90°$.
2. $90 \div 3 = 30°$ for each equal part.
3. From the right base, aim at $30°$ and $30 + 30 = 60°$. Three $30°$ parts total $90°$.



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Problem 3

1. The adjacent parts are $55°$ and $75°$.
2. They share a ray and do not overlap, so add: $55 + 75 = 130°$.
3. Check by subtraction: $130 - 55 = 75°$.

Problem 4

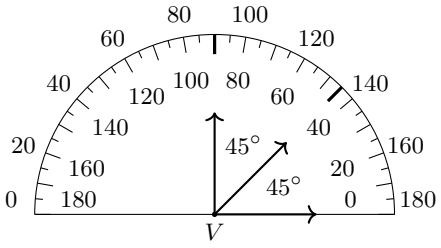
1. The two known parts total $40 + 65 = 105°$.
2. $x = 150 - 105 = 45°$.
3. $40 + 65 + 45 = 150°$ checks all three parts.

Problem 5

1. The whole is $180°$ and one part is $72°$, so $72 + x = 180$.
2. Subtract the known part: $x = 180 - 72 = 108°$.
3. Check: $72 + 108 = 180°$, recovering the full angle.

Problem 6

1. Half of $90°$ is $90 \div 2 = 45°$.
2. From the right base, use the short tick halfway between 40 and 50. Draw the ray toward it, then label both openings.



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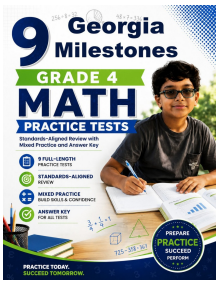

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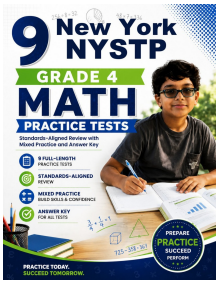

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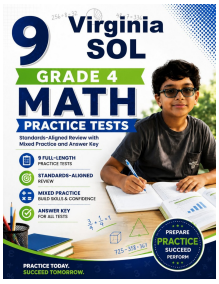

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