Angle Measure as Additive

Explore ideas and representations

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

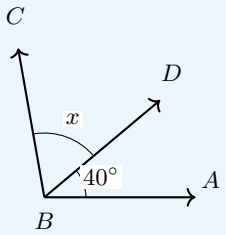
QUICK REVIEW

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: $60°$.

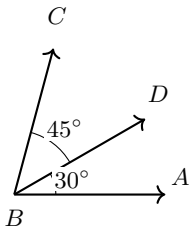


Whole angle $ABC = 100°$

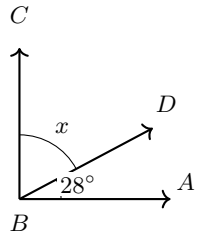
Practice Problems

Show your thinking.

1. Find the whole angle from its two labeled parts.

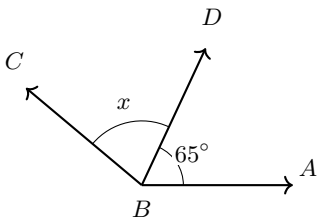


2. Find x in this right angle.



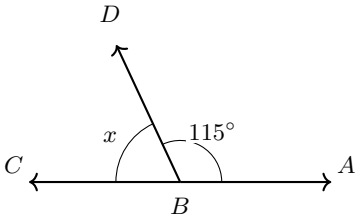
Whole angle $ABC = 90°$

3. Find the unknown part of the full $140°$ opening.



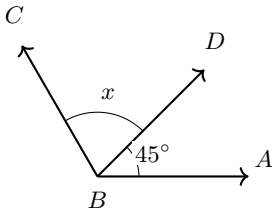
Whole angle $ABC = 140°$

4. A straight angle is split. Find the smaller part.



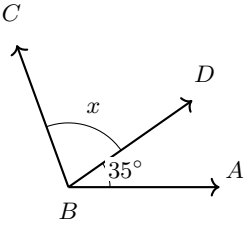
Whole angle $ABC = 180°$

5. A child adds $120 + 45$ to find x. Correct the operation and value.



Whole angle $ABC = 120°$

6. A folding fan has this total opening. Find the unmarked section.



Whole angle $ABC = 110°$

Answer Key

1. $75°$.
2. $62°$.
3. $75°$.
4. $65°$.
5. $75°$.
6. $75°$.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

1. The adjacent parts are $30°$ and $45°$.
2. They share a ray and do not overlap, so add: $30 + 45 = 75°$.
3. Check by subtraction: $75 - 30 = 45°$.

Problem 2

1. The whole is $90°$ and one part is $28°$, so $28 + x = 90$.
2. Subtract the known part: $x = 90 - 28 = 62°$.
3. Check: $28 + 62 = 90°$, recovering the full angle.

Problem 3

1. The whole is $140°$ and one part is $65°$, so $65 + x = 140$.
2. Subtract the known part: $x = 140 - 65 = 75°$.
3. Check: $65 + 75 = 140°$, recovering the full angle.

Problem 4

1. The whole is $180°$ and one part is $115°$, so $115 + x = 180$.
2. Subtract the known part: $x = 180 - 115 = 65°$.
3. Check: $115 + 65 = 180°$, recovering the full angle.

Problem 5

1. The whole is $120°$ and one part is $45°$, so $45 + x = 120$.
2. Subtract the known part: $x = 120 - 45 = 75°$.
3. Check: $45 + 75 = 120°$, recovering the full angle.

Problem 6

1. The whole is $110°$ and one part is $35°$, so $35 + x = 110$.
2. Subtract the known part: $x = 110 - 35 = 75°$.
3. Check: $35 + 75 = 110°$, recovering the full angle.

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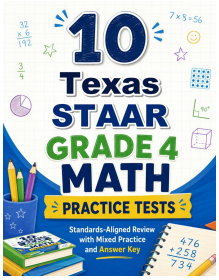

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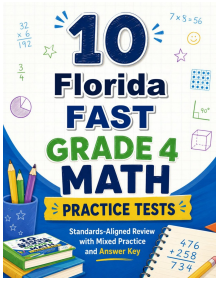

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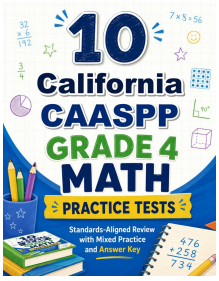

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