

Angle Relationships Error Analysis

Each of the problems below was solved incorrectly. For each problem, circle the mistake in the work/answer, explain what the mistake is, and find the correct answer.

1. Find the value of x .

$5x + 100 = 180$
 $5x = 100$
 $\frac{5x}{5} = \frac{100}{5}$
 $x = 20$

~~$5x + 100 = 180$
 $100 - 100$
 $5x = 80$
 $\frac{5x}{5} = \frac{80}{5}$
 $x = 16$~~

Explain the mistake: _____

Find the correct answer: _____

2. Find the value of x .

$3x + 39 = 90$
 $3x + 34 = 90$
 $3x = 56$
 $\frac{3x}{3} = \frac{56}{3}$
 $x = 17$

~~$3x + 39 = 180$
 $39 - 39$
 $3x = 141$
 $\frac{3x}{3} = \frac{141}{3}$
 $x = 47$~~

Explain the mistake: _____

Find the correct answer: _____

3. Find the value of x .

$6x + 2x + 8 = 180$
 $8x + 8 = 180$
 $8x = 172$
 $\frac{8x}{8} = \frac{172}{8}$
 $x = 21.5$

~~$6x + 2x + 8 = 180$
 $6x = 180$
 $\frac{6x}{6} = \frac{180}{6}$
 $x = 11.25$~~

Explain the mistake: _____

Find the correct answer: _____

4. An angle measures 47° . What is the measure of its supplement?

180
 $? - 47 = 43$
 $180 - 47 = 133$

Explain the mistake: _____

Find the correct answer: _____

5. Find the value of x .

$115 = 5x - 10$
 $+ 10$
 $125 = 5x$
 $\frac{125}{5} = \frac{5x}{5}$
 $x = 15$

~~$115 + 5x - 10 = 180$
 $5x + 105 = 180$~~

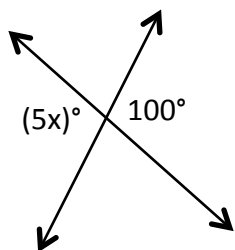
Explain the mistake: _____

Find the correct answer: _____

Angle Relationships Error Analysis

Each of the problems below was solved incorrectly. For each problem, circle the mistake in the work/answer, explain what the mistake is, and find the correct answer.

1. Find the value of x.



$$\begin{array}{r} 5x + 100 = 180 \\ - 100 \quad - 100 \\ \hline 5x = 80 \\ \frac{5x}{5} = \frac{80}{5} \\ x = 16 \end{array}$$

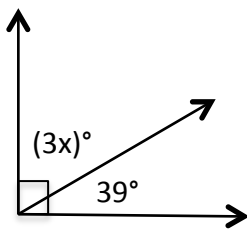
Explain the mistake: _____

The angles are vertical so they are equal to each other. 5x should be set equal to 100.

Find the correct answer:

$$x = 20$$

2. Find the value of x.



$$\begin{array}{r} 3x + 39 = 180 \\ - 39 \quad - 39 \\ \hline 3x = 141 \\ \frac{3x}{3} = \frac{141}{3} \\ x = 47 \end{array}$$

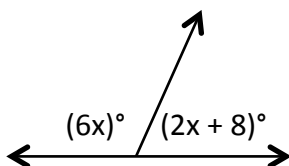
Explain the mistake: _____

These angles are complementary – they add to 90°, not 180°.

Find the correct answer:

$$x = 17$$

3. Find the value of x.



$$\begin{array}{r} 6x + 2x + 8 = 180 \\ \quad 16x = 180 \\ \quad \frac{16x}{16} = \frac{180}{16} \\ x = 11.25 \end{array}$$

Explain the mistake: _____

You can't combine 6x, 2x, and 8 to get 16x. Only 6x and 2x are like terms.

Find the correct answer:

$$x = 21.5$$

4. An angle measures 47°. What is the measure of its supplement?

$$90 - 47 = 43^\circ$$

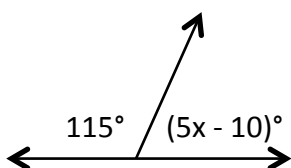
Explain the mistake: _____

Supplementary angles add to 180°, so 47 should be subtracted from 180.

Find the correct answer:

$$133^\circ$$

5. Find the value of x.



$$\begin{array}{r} 115 = 5x - 10 \\ + 10 \quad + 10 \\ \hline 125 = 5x \\ \frac{125}{5} = \frac{5x}{5} \\ x = 25 \end{array}$$

Explain the mistake: _____

The angles are not equal so they should not be set equal to each other. Together they add to 180°.

Find the correct answer:

$$x = 15$$