Triangle Inequality Theorem

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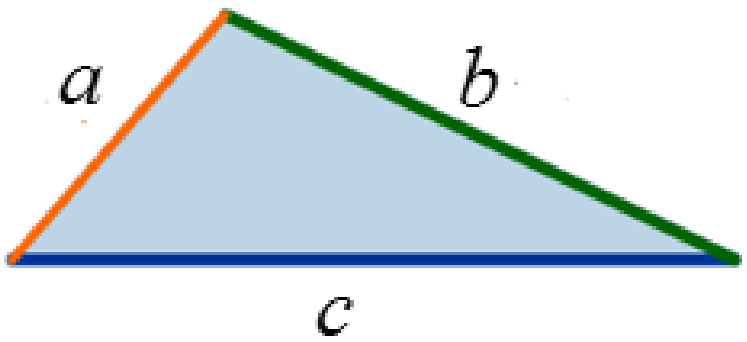
What is the Triangle Inequality Theorem?

The sum of the lengths of any two sides of a triangle is greater than the length of the third side.



$$a + b > c$$

$$a + c > b$$

$$b + c > a$$

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

1. 8, 14, 9

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

1. $8, 14, 9$

$8 + 14 > 9$

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

1. $8, 14, 9$

$8 + 14 > 9$ True

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

1. $8, 14, 9$

$8 + 14 > 9$ True
$14 + 9 > 8$

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

1. $8, 14, 9$

$8 + 14 > 9$	True
$14 + 9 > 8$	True

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

1. $8, 14, 9$

$8 + 14 > 9$	True
$14 + 9 > 8$	True
$8 + 9 > 14$	

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

1. $8, 14, 9$

$8 + 14 > 9$	True
$14 + 9 > 8$	True
$8 + 9 > 14$	True

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

1. $8, 14, 9$

$8 + 14 > 9$	True
$14 + 9 > 8$	True
$8 + 9 > 14$	True

Yes

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

2. $3, 6, 2$

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

2. $3, 6, 2$

$3 + 6 > 2$

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

2. $3, 6, 2$

$3 + 6 > 2$ True

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

2. $3, 6, 2$

$3 + 6 > 2$ True
$6 + 2 > 3$

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

2. $3, 6, 2$

$3 + 6 > 2$	True
$6 + 2 > 3$	True

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

2. $3, 6, 2$

$3 + 6 > 2$	True
$6 + 2 > 3$	True
$3 + 2 > 6$	

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

2. $3, 6, 2$

$3 + 6 > 2$	True
$6 + 2 > 3$	True
$3 + 2 > 6$	False

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

2. $3, 6, 2$

$3 + 6 > 2$	True
$6 + 2 > 3$	True
$3 + 2 > 6$	False

No

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

3. $8, 2, 8$

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

3. $8, 2, 8$

$8 + 2 > 8$

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

3. $8, 2, 8$

$8 + 2 > 8$ True

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

3. $8, 2, 8$

$8 + 2 > 8$ True
$2 + 8 > 8$

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

3. $8, 2, 8$

$8 + 2 > 8$	True
$2 + 8 > 8$	True

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

3. $8, 2, 8$

$8 + 2 > 8$	True
$2 + 8 > 8$	True
$8 + 8 > 2$	

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

3. $8, 2, 8$

$8 + 2 > 8$	True
$2 + 8 > 8$	True
$8 + 8 > 2$	True

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

3. $8, 2, 8$

$8 + 2 > 8$	True
$2 + 8 > 8$	True
$8 + 8 > 2$	True

Yes

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

4. $6, 5, 9$

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

4. $6, 5, 9$

$6 + 5 > 9$

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

4. $6, 5, 9$

$6 + 5 > 9$ True

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

4. $6, 5, 9$

$6 + 5 > 9$ True
$5 + 9 > 6$

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

4. $6, 5, 9$

$6 + 5 > 9$	True
$5 + 9 > 6$	True

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

4. $6, 5, 9$

$6 + 5 > 9$	True
$5 + 9 > 6$	True
$6 + 9 > 5$	

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

4. $6, 5, 9$

$6 + 5 > 9$	True
$5 + 9 > 6$	True
$6 + 9 > 5$	True

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

4. $6, 5, 9$

$6 + 5 > 9$	True
$5 + 9 > 6$	True
$6 + 9 > 5$	True

Yes

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

5. 1, 13, 13

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

5. $1, 13, 13$

$1 + 13 > 13$

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

5. $1, 13, 13$

$1 + 13 > 13$ True

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

5. $1, 13, 13$

$1 + 13 > 13$ True
$13 + 13 > 1$

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

5. $1, 13, 13$

$1 + 13 > 13$	True
$13 + 13 > 1$	True

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

5. $1, 13, 13$

$1 + 13 > 13$	True
$13 + 13 > 1$	True
$1 + 13 > 13$	

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

5. $1, 13, 13$

$1 + 13 > 13$	True
$13 + 13 > 1$	True
$1 + 13 > 13$	True

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

5. $1, 13, 13$

$1 + 13 > 13$	True
$13 + 13 > 1$	True
$1 + 13 > 13$	True

Yes

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

6. $4, 6, 10$

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

6. $4, 6, 10$

$4 + 6 > 10$

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

6. $4, 6, 10$

$4 + 6 > 10$ False

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

6. $4, 6, 10$

$4 + 6 > 10$ False
$6 + 10 > 4$

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

6. $4, 6, 10$

$4 + 6 > 10$	False
$6 + 10 > 4$	True

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

6. $4, 6, 10$

$4 + 6 > 10$	False
$6 + 10 > 4$	True
$4 + 10 > 6$	

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

6. $4, 6, 10$

$4 + 6 > 10$	False
$6 + 10 > 4$	True
$4 + 10 > 6$	True

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

6. $4, 6, 10$

$4 + 6 > 10$	False
$6 + 10 > 4$	True
$4 + 10 > 6$	True

No

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

7. $6, 7, 9$

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

7. $6, 7, 9$

$6 + 7 > 9$

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

7. $6, 7, 9$

$6 + 7 > 9$ True

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

7. $6, 7, 9$

$6 + 7 > 9$ True
$7 + 9 > 6$

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

7. $6, 7, 9$

$6 + 7 > 9$	True
$7 + 9 > 6$	True

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

7. $6, 7, 9$

$6 + 7 > 9$	True
$7 + 9 > 6$	True
$6 + 9 > 7$	

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

7. $6, 7, 9$

$6 + 7 > 9$	True
$7 + 9 > 6$	True
$6 + 9 > 7$	True

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

7. $6, 7, 9$

$6 + 7 > 9$	True
$7 + 9 > 6$	True
$6 + 9 > 7$	True

Yes

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

8. $4, 7, 12$

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

8. $4, 7, 12$

$4 + 7 > 12$

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

8. $4, 7, 12$

$4 + 7 > 12$ False

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

8. $4, 7, 12$

$4 + 7 > 12$ False
$7 + 12 > 4$

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

8. $4, 7, 12$

$4 + 7 > 12$	False
$7 + 12 > 4$	True

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

8. $4, 7, 12$

$4 + 7 > 12$	False
$7 + 12 > 4$	True
$4 + 12 > 7$	

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

8. $4, 7, 12$

$4 + 7 > 12$	False
$7 + 12 > 4$	True
$4 + 12 > 7$	True

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

8. $4, 7, 12$

$4 + 7 > 12$	False
$7 + 12 > 4$	True
$4 + 12 > 7$	True

No

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

9. $6, 15, 9$

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

9. $6, 15, 9$

$6 + 15 > 9$

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

9. $6, 15, 9$

$6 + 15 > 9$ True

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

9. $6, 15, 9$

$6 + 15 > 9$ True
$15 + 9 > 6$

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

9. $6, 15, 9$

$6 + 15 > 9$	True
$15 + 9 > 6$	True

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

9. $6, 15, 9$

$6 + 15 > 9$	True
$15 + 9 > 6$	True
$6 + 9 > 15$	

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

9. $6, 15, 9$

$6 + 15 > 9$	True
$15 + 9 > 6$	True
$6 + 9 > 15$	False

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

9. $6, 15, 9$

$6 + 15 > 9$	True
$15 + 9 > 6$	True
$6 + 9 > 15$	False

No

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

10. $12, 11, 9$

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

10. $12, 11, 9$

$12 + 11 > 9$

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

10. $12, 11, 9$

$12 + 11 > 9$ True

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

10. $12, 11, 9$

$12 + 11 > 9$ True
$11 + 9 > 12$

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

10. $12, 11, 9$

$12 + 11 > 9$	True
$11 + 9 > 12$	True

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

10. $12, 11, 9$

$12 + 11 > 9$	True
$11 + 9 > 12$	True
$12 + 9 > 11$	

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

10. $12, 11, 9$

$12 + 11 > 9$	True
$11 + 9 > 12$	True
$12 + 9 > 11$	True

Example 1

Write *Yes* if the given measures can form a triangle or *No* if not.

10. $12, 11, 9$

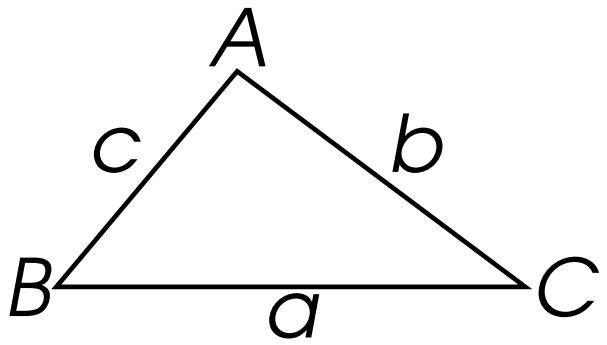
$12 + 11 > 9$	True
$11 + 9 > 12$	True
$12 + 9 > 11$	True

Yes

Example 2

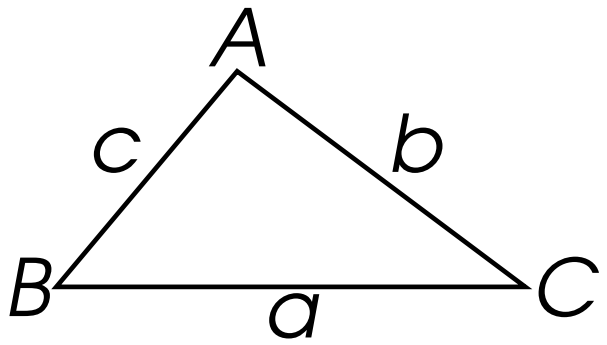
Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.

1. $a = 5, b = 9$



Example 2

Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.

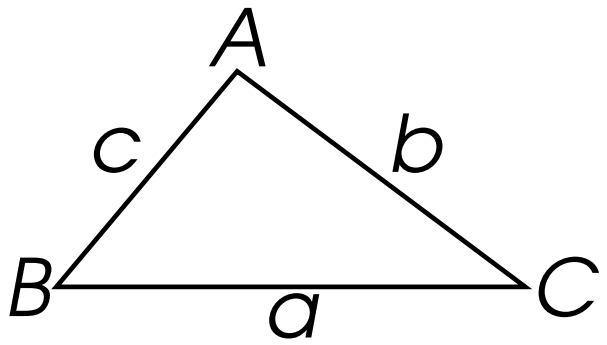


1. $a = 5, b = 9$

$a + b > c$

Example 2

Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.

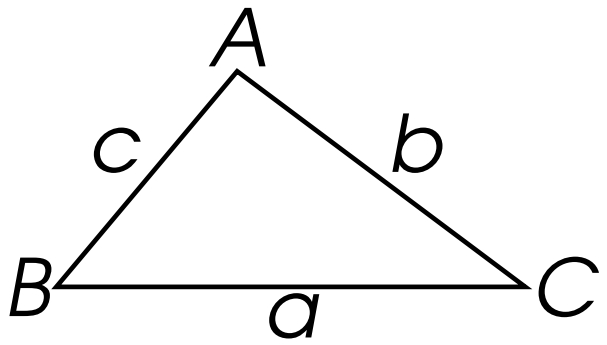


1. $a = 5, b = 9$

$a + b > c$
$5 + 9 > c$

Example 2

Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.

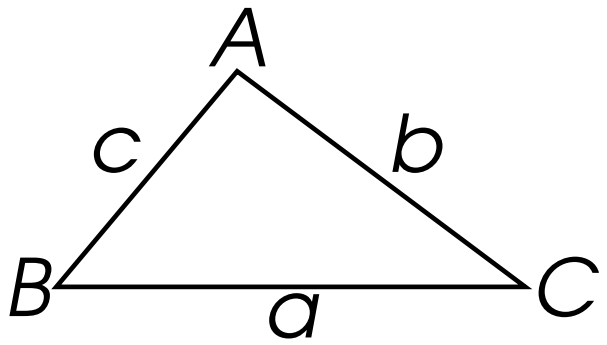


1. $a = 5, b = 9$

$a + b > c$
$5 + 9 > c$
$14 > c$

Example 2

Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.

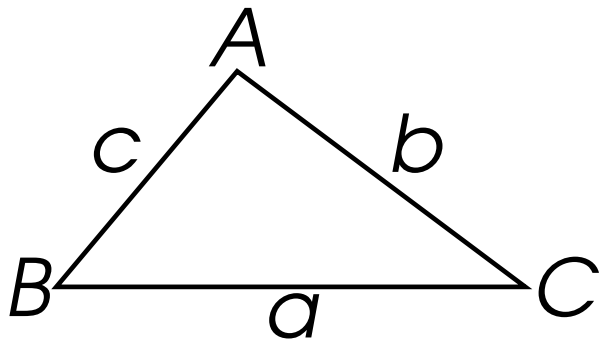


1. $a = 5, b = 9$

$a + b > c \qquad b + c > a$
$5 + 9 > c$
$14 > c$

Example 2

Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.



1. $a = 5, b = 9$

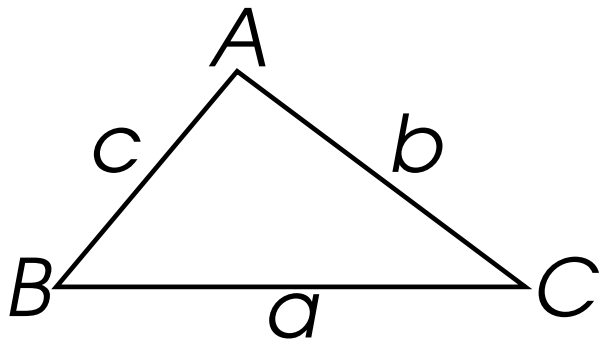
$a + b > c$ $\quad$ $b + c > a$

$5 + 9 > c$ $\quad$ $9 + c > 5$

$14 > c$

Example 2

Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.



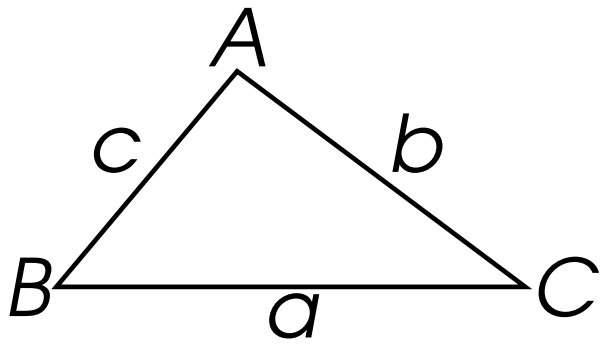
1. $a = 5, b = 9$

$a + b > c$
$5 + 9 > c$
$14 > c$

$b + c > a$
$9 + c > 5$
$9 - 9 + c > 5 - 9$

Example 2

Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.



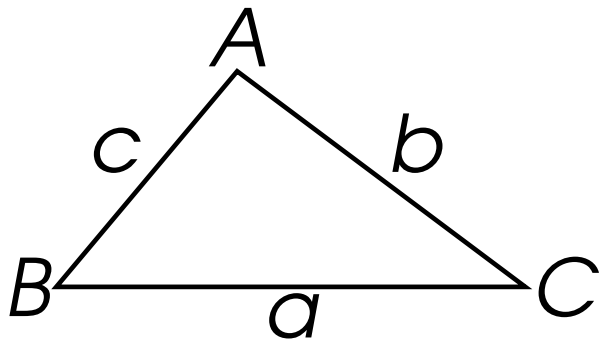
1. $a = 5, b = 9$

$a + b > c$
$5 + 9 > c$
$14 > c$

$b + c > a$
$9 + c > 5$
$9 - 9 + c > 5 - 9$
$c > -4$

Example 2

Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.



1. $a = 5, b = 9$

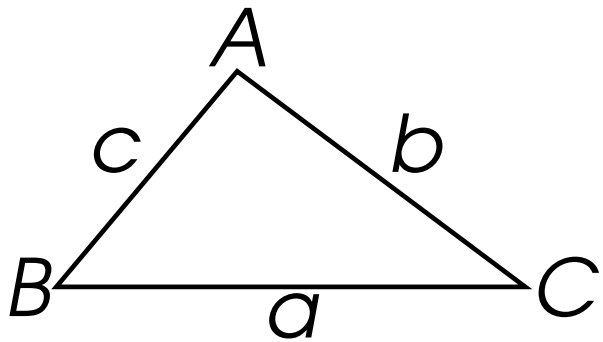
$a + b > c$
$5 + 9 > c$
$14 > c$

$b + c > a$
$9 + c > 5$
$9 - 9 + c > 5 - 9$
$c > -4$

$a + c > b$

Example 2

Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.



1. $a = 5, b = 9$

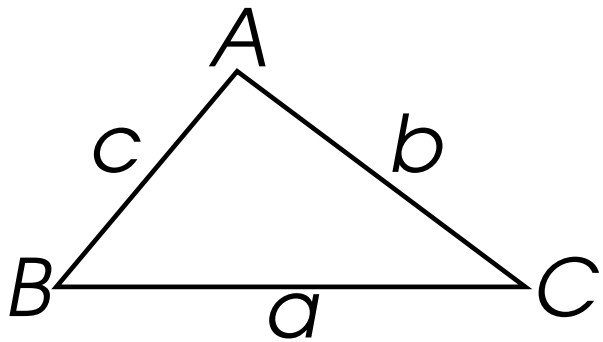
$a + b > c$
$5 + 9 > c$
$14 > c$

$b + c > a$
$9 + c > 5$
$9 - 9 + c > 5 - 9$
$c > -4$

$a + c > b$
$5 + c > 9$

Example 2

Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.



1. $a = 5, b = 9$

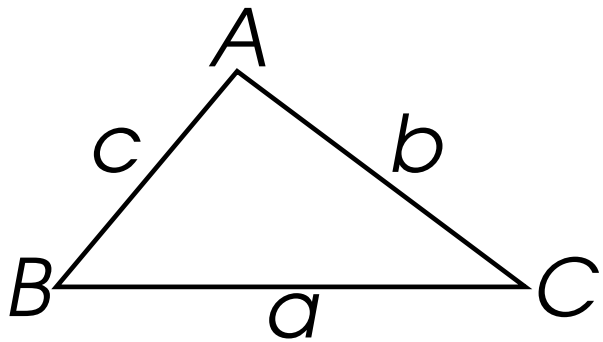
$a + b > c$
$5 + 9 > c$
$14 > c$

$b + c > a$
$9 + c > 5$
$9 - 9 + c > 5 - 9$
$c > -4$

$a + c > b$
$5 + c > 9$
$5 - 5 + c > 9 - 5$

Example 2

Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.



1. $a = 5, b = 9$

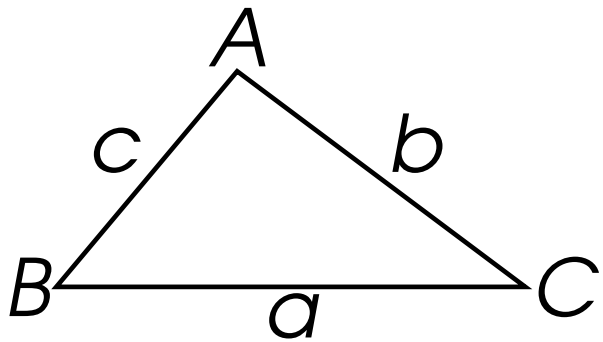
$a + b > c$
$5 + 9 > c$
$14 > c$

$b + c > a$
$9 + c > 5$
$9 - 9 + c > 5 - 9$
$c > -4$

$a + c > b$
$5 + c > 9$
$5 - 5 + c > 9 - 5$
$c > 4$

Example 2

Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.



1. $a = 5, b = 9$

$a + b > c$
$5 + 9 > c$
$14 > c$

$b + c > a$
$9 + c > 5$
$9 - 9 + c > 5 - 9$
$c > -4$

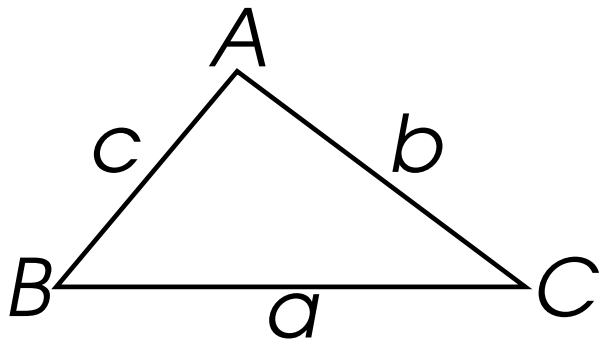
$a + c > b$
$5 + c > 9$
$5 - 5 + c > 9 - 5$
$c > 4$

$$\therefore 4 < c < 14$$

Example 2

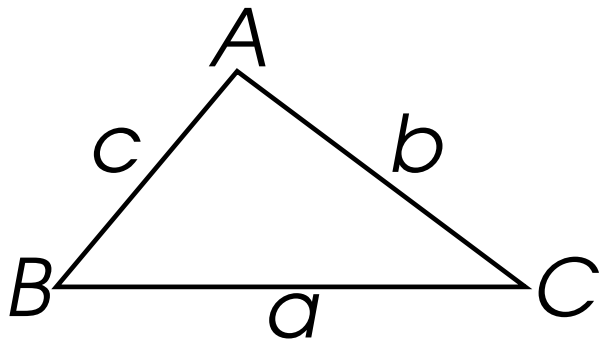
Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.

2. $a = 6, c = 10$



Example 2

Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.

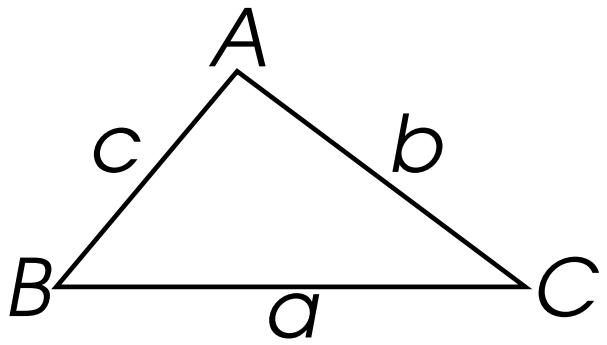


2. $a = 6, c = 10$

$a + b > c$

Example 2

Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.

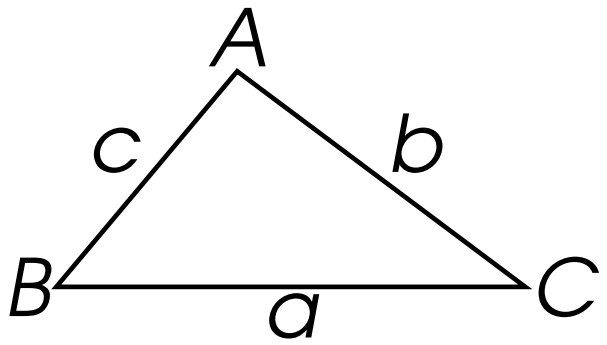


2. $a = 6, c = 10$

$a + b > c$
$6 + b > 10$

Example 2

Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.

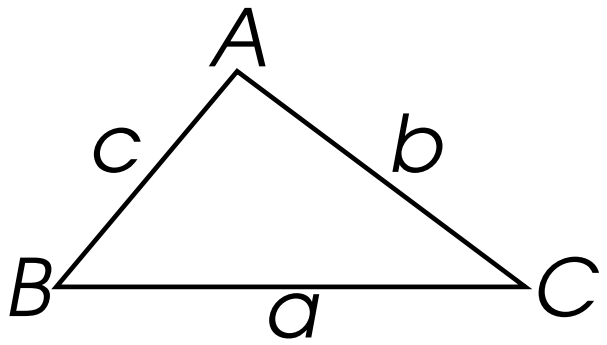


2. $a = 6, c = 10$

$a + b > c$
$6 + b > 10$
$6 - 6 + b > 10 - 6$

Example 2

Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.

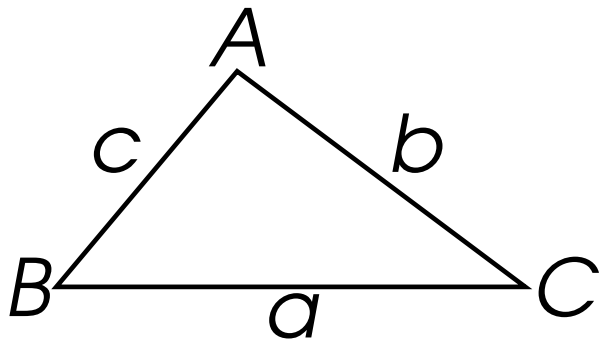


2. $a = 6, c = 10$

$a + b > c$
$6 + b > 10$
$6 - 6 + b > 10 - 6$
$b > 4$

Example 2

Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.



2. $a = 6, c = 10$

$a + b > c$ $\qquad$ $b + c > a$

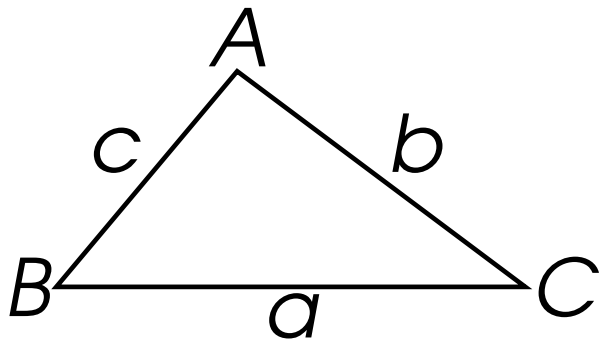
$6 + b > 10$

$6 - 6 + b > 10 - 6$

$b > 4$

Example 2

Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.



2. $a = 6, c = 10$

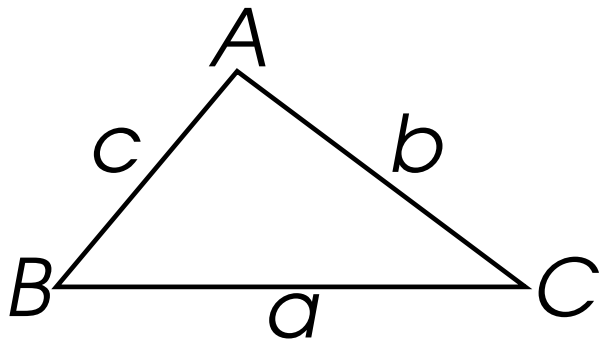
$a + b > c$
$6 + b > 10$
$6 - 6 + b > 10 - 6$
$b > 4$

$b + c > a$
$b + 10 > 6$

Example 2

Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.

2. $a = 6, c = 10$



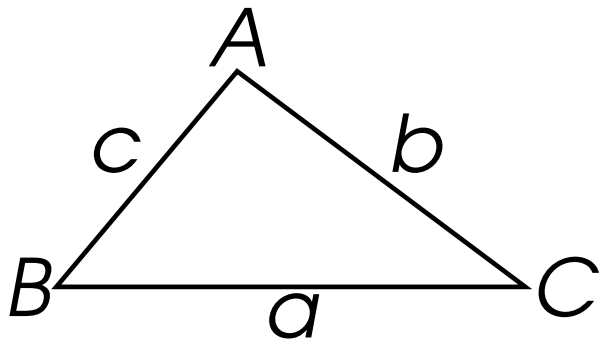
$a + b > c$
$6 + b > 10$
$6 - 6 + b > 10 - 6$
$b > 4$

$b + c > a$
$b + 10 > 6$
$b + 10 - 10 > 6 - 10$

Example 2

Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.

2. $a = 6, c = 10$



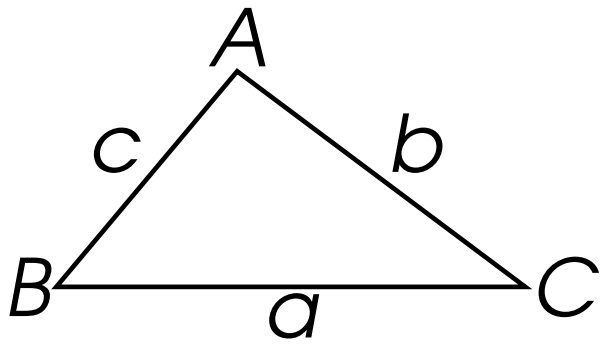
$a + b > c$
$6 + b > 10$
$6 - 6 + b > 10 - 6$
$b > 4$

$b + c > a$
$b + 10 > 6$
$b + 10 - 10 > 6 - 10$
$b > -4$

Example 2

Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.

2. $a = 6, c = 10$



$a + b > c$
$6 + b > 10$
$6 - 6 + b > 10 - 6$
$b > 4$

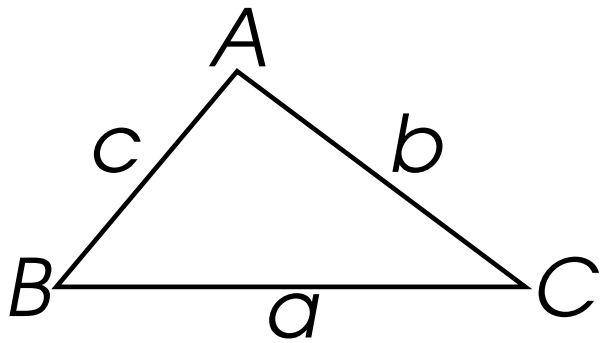
$b + c > a$
$b + 10 > 6$
$b + 10 - 10 > 6 - 10$
$b > -4$

$a + c > b$

Example 2

Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.

2. $a = 6, c = 10$



$a + b > c$
$6 + b > 10$
$6 - 6 + b > 10 - 6$
$b > 4$

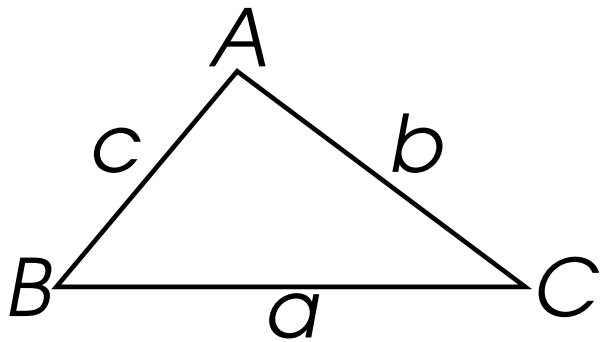
$b + c > a$
$b + 10 > 6$
$b + 10 - 10 > 6 - 10$
$b > -4$

$a + c > b$
$6 + 10 > b$

Example 2

Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.

2. $a = 6, c = 10$



$a + b > c$
$6 + b > 10$
$6 - 6 + b > 10 - 6$
$b > 4$

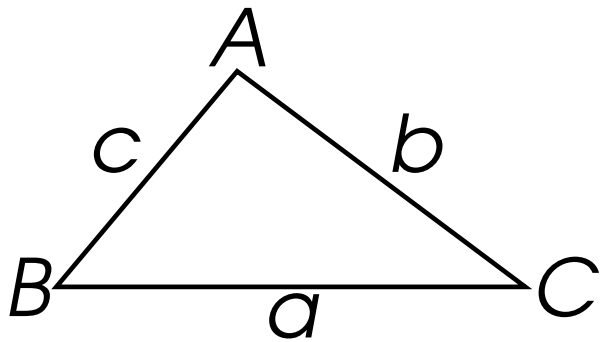
$b + c > a$
$b + 10 > 6$
$b + 10 - 10 > 6 - 10$
$b > -4$

$a + c > b$
$6 + 10 > b$
$16 > b$

Example 2

Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.

2. $a = 6, c = 10$



$a + b > c$
$6 + b > 10$
$6 - 6 + b > 10 - 6$
$b > 4$

$b + c > a$
$b + 10 > 6$
$b + 10 - 10 > 6 - 10$
$b > -4$

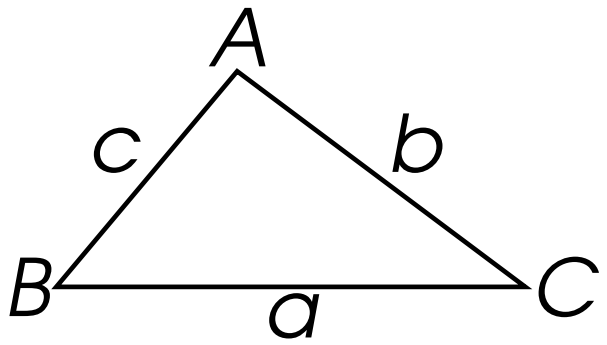
$a + c > b$
$6 + 10 > b$
$16 > b$

$$\therefore 4 < b < 16$$

Example 2

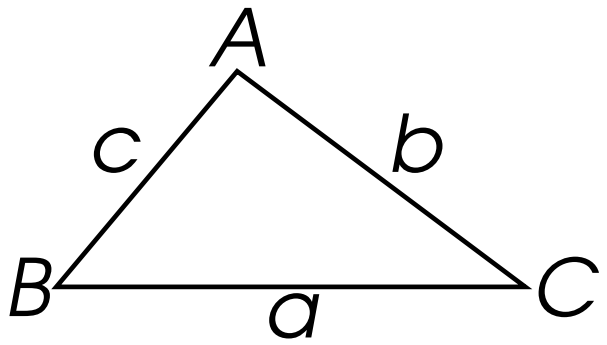
Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.

3. $b = 11, c = 8$



Example 2

Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.

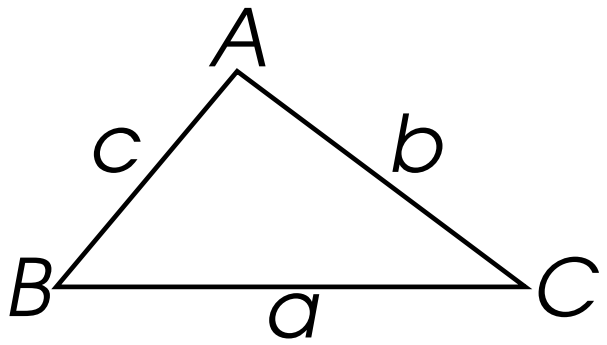


3. $b = 11, c = 8$

$a + b > c$

Example 2

Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.

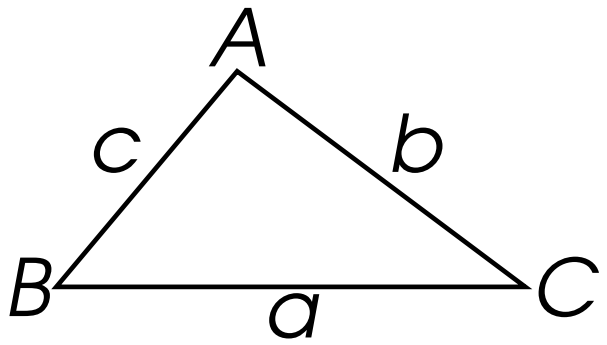


3. $b = 11, c = 8$

$a + b > c$
$a + 11 > 8$

Example 2

Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.

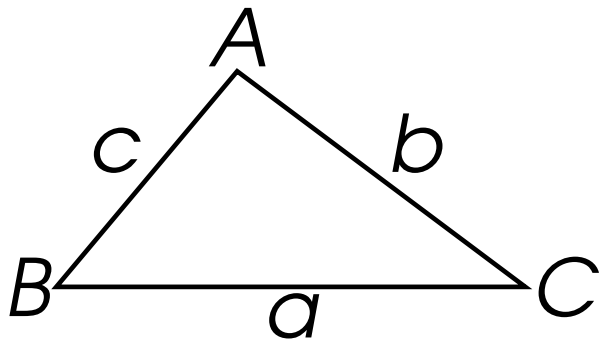


3. $b = 11, c = 8$

$a + b > c$
$a + 11 > 8$
$a + 11 - 11 > 8 - 11$

Example 2

Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.



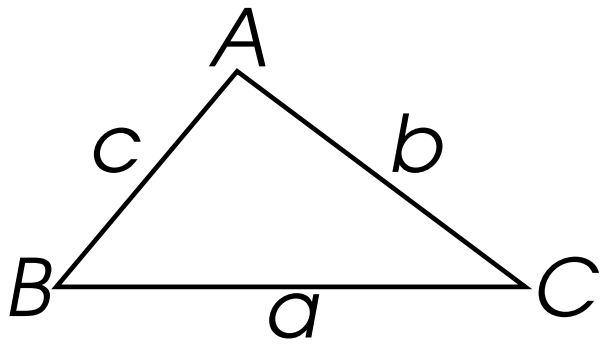
3. $b = 11, c = 8$

$a + b > c$
$a + 11 > 8$
$a + 11 - 11 > 8 - 11$
$a > -3$

Example 2

Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.

3. $b = 11, c = 8$



$a + b > c$ $\qquad$ $b + c > a$

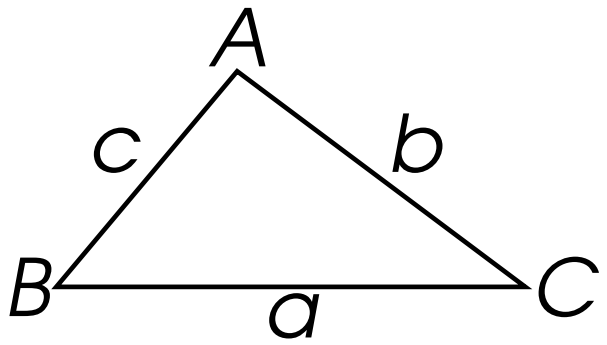
$a + 11 > 8$

$a + 11 - 11 > 8 - 11$

$a > -3$

Example 2

Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.



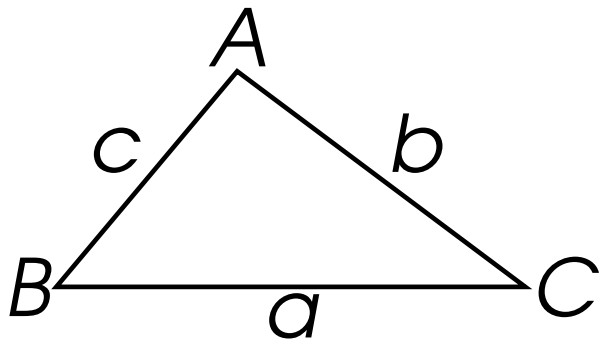
3. $b = 11, c = 8$

$a + b > c$
$a + 11 > 8$
$a + 11 - 11 > 8 - 11$
$a > -3$

$b + c > a$
$11 + 8 > a$

Example 2

Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.



3. $b = 11, c = 8$

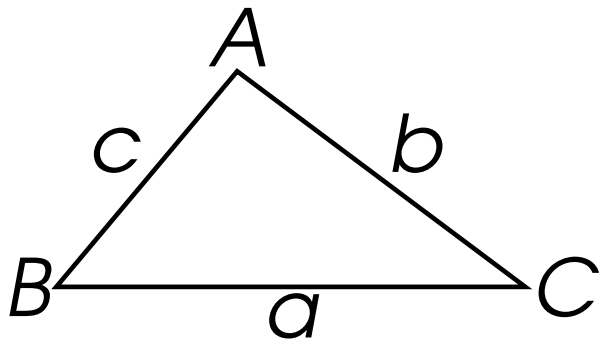
$a + b > c$
$a + 11 > 8$
$a + 11 - 11 > 8 - 11$
$a > -3$

$b + c > a$
$11 + 8 > a$
$19 > a$

Example 2

Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.

3. $b = 11, c = 8$



$a + b > c$
$a + 11 > 8$
$a + 11 - 11 > 8 - 11$
$a > -3$

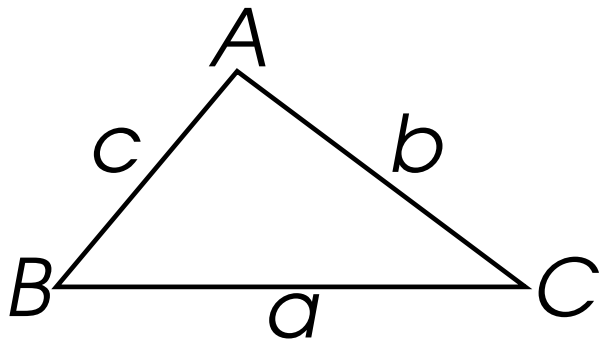
$b + c > a$
$11 + 8 > a$
$19 > a$

$a + c > b$

Example 2

Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.

3. $b = 11, c = 8$



$a + b > c$
$a + 11 > 8$
$a + 11 - 11 > 8 - 11$
$a > -3$

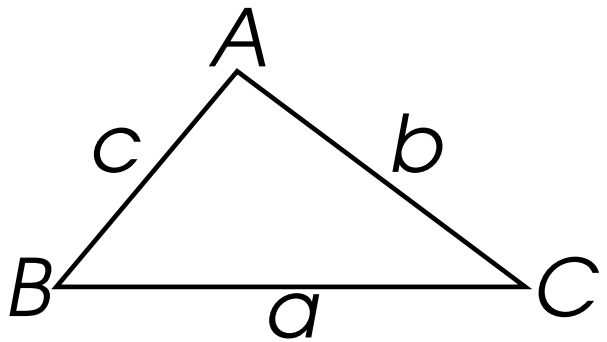
$b + c > a$
$11 + 8 > a$
$19 > a$

$a + c > b$
$a + 8 > 11$

Example 2

Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.

3. $b = 11, c = 8$



$a + b > c$
$a + 11 > 8$
$a + 11 - 11 > 8 - 11$
$a > -3$

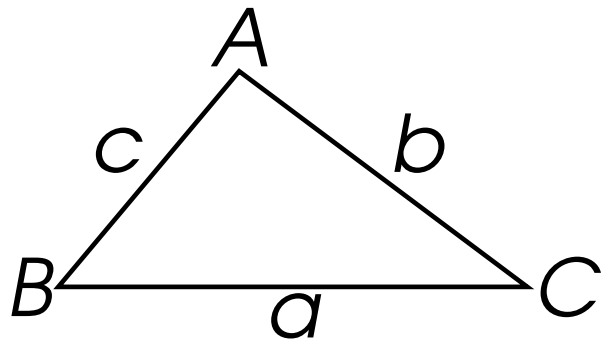
$b + c > a$
$11 + 8 > a$
$19 > a$

$a + c > b$
$a + 8 > 11$
$a + 8 - 8 > 11 - 8$

Example 2

Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.

3. $b = 11, c = 8$



$a + b > c$
$a + 11 > 8$
$a + 11 - 11 > 8 - 11$
$a > -3$

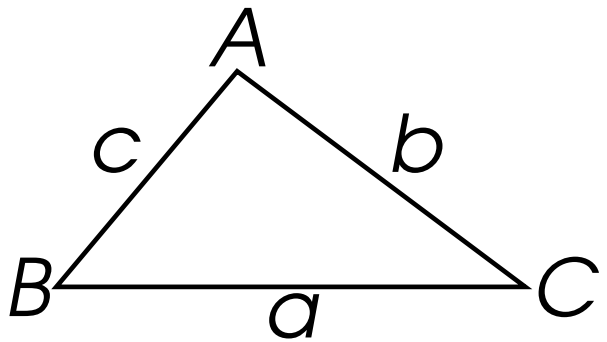
$b + c > a$
$11 + 8 > a$
$19 > a$

$a + c > b$
$a + 8 > 11$
$a + 8 - 8 > 11 - 8$
$a > 3$

Example 2

Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.

3. $b = 11, c = 8$



$a + b > c$
$a + 11 > 8$
$a + 11 - 11 > 8 - 11$
$a > -3$

$b + c > a$
$11 + 8 > a$
$19 > a$

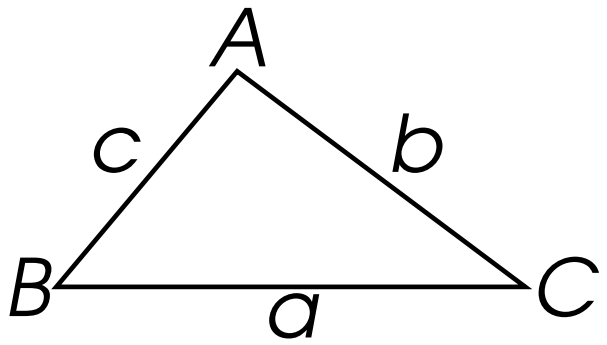
$a + c > b$
$a + 8 > 11$
$a + 8 - 8 > 11 - 8$
$a > 3$

$$\therefore 3 < a < 19$$

Example 2

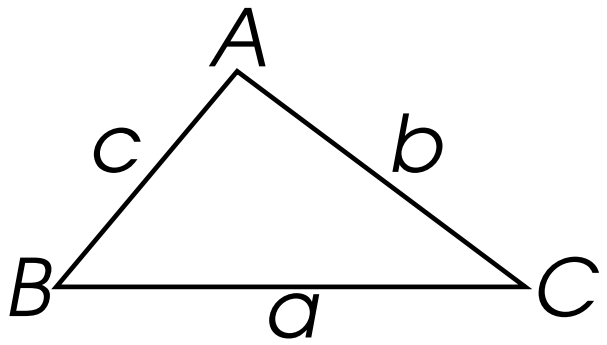
Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.

4. $a = 3, b = 13$



Example 2

Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.

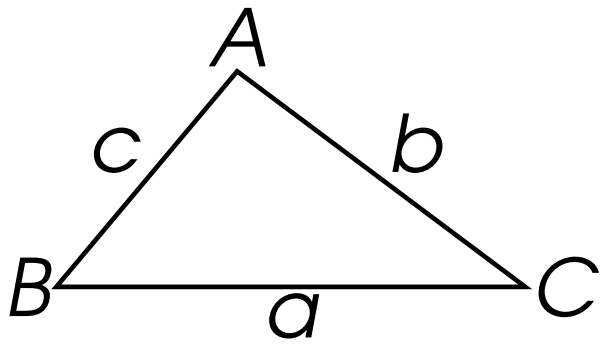


4. $a = 3, b = 13$

$a + b > c$

Example 2

Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.

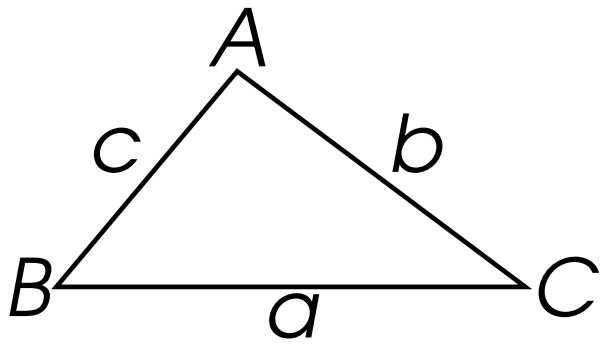


4. $a = 3, b = 13$

$a + b > c$
$3 + 13 > c$

Example 2

Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.

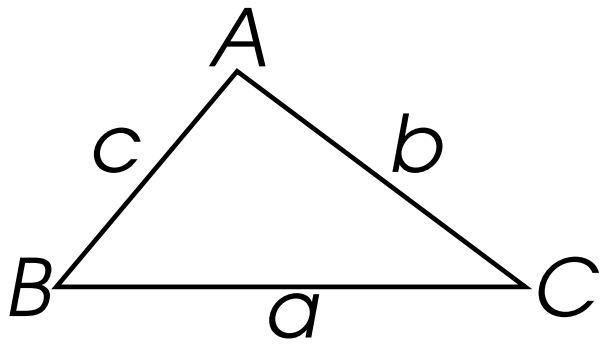


4. $a = 3, b = 13$

$a + b > c$
$3 + 13 > c$
$16 > c$

Example 2

Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.



4. $a = 3, b = 13$

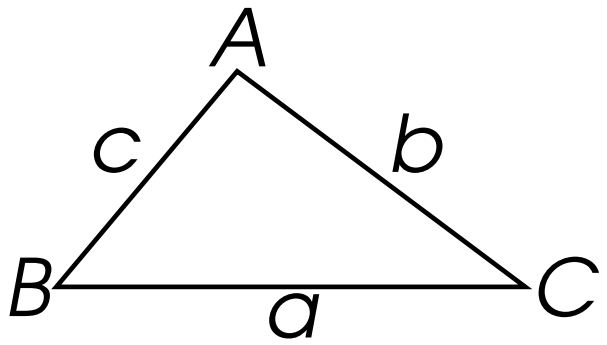
$a + b > c \qquad b + c > a$

$3 + 13 > c$

$16 > c$

Example 2

Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.



4. $a = 3, b = 13$

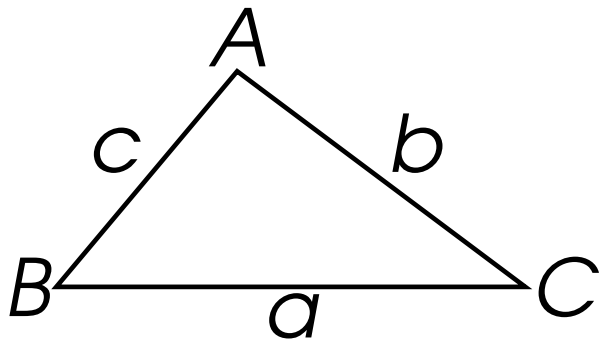
$a + b > c$ $\quad$ $b + c > a$

$3 + 13 > c$ $\quad$ $13 + c > 3$

$16 > c$

Example 2

Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.



4. $a = 3, b = 13$

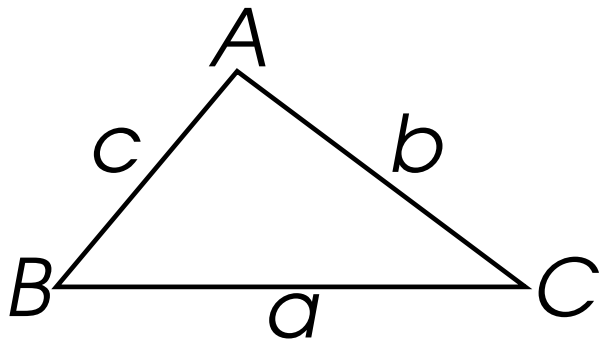
$a + b > c$ $\quad$ $b + c > a$

$3 + 13 > c$ $\quad$ $13 + c > 3$

$16 > c$ $\quad$ $13 - 13 + c > 3 - 13$

Example 2

Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.



4. $a = 3, b = 13$

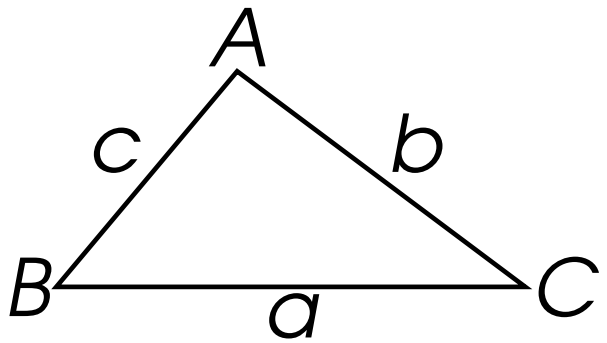
$a + b > c$
$3 + 13 > c$
$16 > c$

$b + c > a$
$13 + c > 3$
$13 - 13 + c > 3 - 13$
$c > -10$

Example 2

Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.

4. $a = 3, b = 13$



$a + b > c$
$3 + 13 > c$
$16 > c$

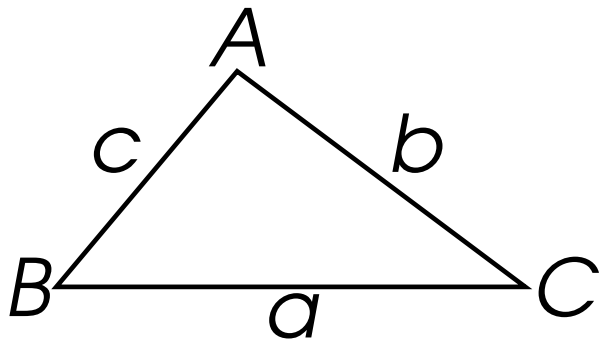
$b + c > a$
$13 + c > 3$
$13 - 13 + c > 3 - 13$
$c > -10$

$a + c > b$

Example 2

Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.

4. $a = 3, b = 13$



$a + b > c$
$3 + 13 > c$
$16 > c$

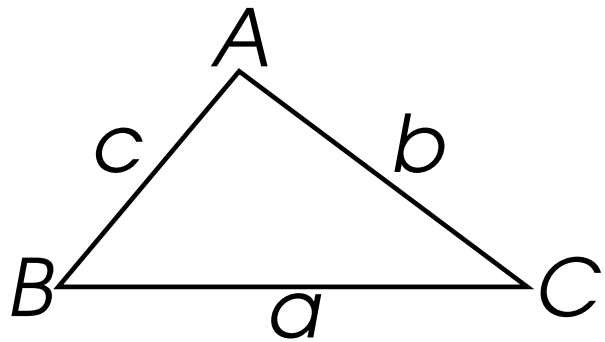
$b + c > a$
$13 + c > 3$
$13 - 13 + c > 3 - 13$
$c > -10$

$a + c > b$
$3 + c > 13$

Example 2

Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.

4. $a = 3, b = 13$



$a + b > c$
$3 + 13 > c$
$16 > c$

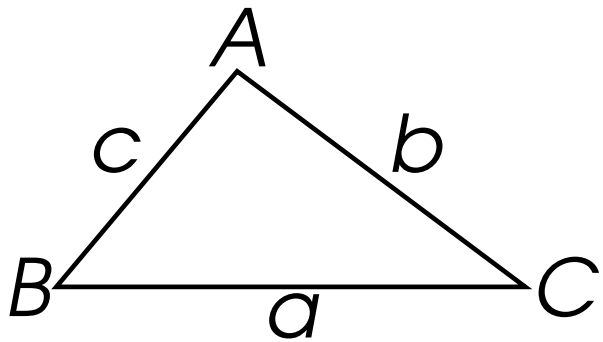
$b + c > a$
$13 + c > 3$
$13 - 13 + c > 3 - 13$
$c > -10$

$a + c > b$
$3 + c > 13$
$3 - 3 + c > 13 - 3$

Example 2

Two sides of $\triangle ABC$ have the following measures. Find the range of possible measures for the third side.

4. $a = 3, b = 13$



$a + b > c$
$3 + 13 > c$
$16 > c$

$b + c > a$
$13 + c > 3$
$13 - 13 + c > 3 - 13$
$c > -10$

$a + c > b$
$3 + c > 13$
$3 - 3 + c > 13 - 3$
$c > 10$

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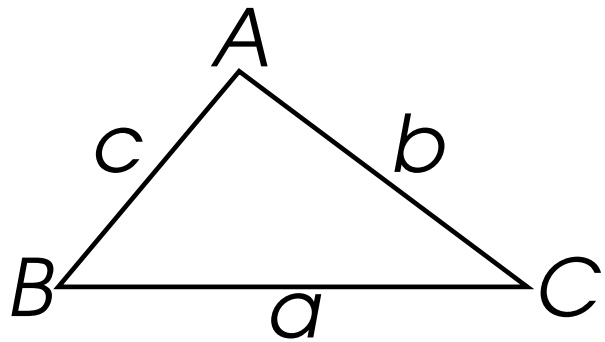

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$a + c > b$
$3 + c > 13$
$3 - 3 + c > 13 - 3$
$c > 10$

$$\therefore 10 < c < 16$$

Thank you for attending the virtual class.