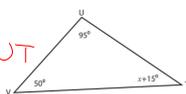
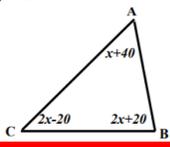


CODE RED – DO NOW

Complete Problems #1a-d

1) Solve for x.

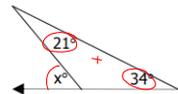
a)  $50 + 95 + x + 15 = 180$
 $x = 20$
 $\angle T = 35$

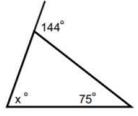
b)  $2x - 20 + x + 40 + 2x + 20 = 180$
 $x = 28$

CODE RED – DO NOW

Complete Problems #1a-d

1) Solve for x.

c)  $x = 21 + 34$
 $x = 55^\circ$

d)  $144 = x + 75$
 $69 = x$

Inequalities in Triangles

SOL G.5abcd

Learning Target: By the end of class today, I will be able to order the angles and sides of a triangle, determine whether a triangle exists, and determine the range of the third side of a triangle by scoring at least a 75% (3 out of 4) on the exit ticket.

Essential question: What angle/side relationships can help me understand the dimensions of a triangle?

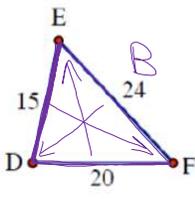
Today's Agenda

- ✓ DO NOW
- ✓ Ordering Sides and Angles
- ✓ Is It A Triangle?
- ✓ Range of the Third Side
- ✓ Exit Ticket

CODE YELLOW

Triangle Facts

The biggest side is always opposite the biggest angle.



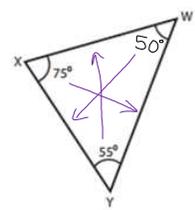
\angle	Sides
D	EF
E	DF
F	ED

CODE YELLOW

Triangle Facts

The biggest side is always opposite the biggest angle.

\angle	Sides
M	XY
N	XZ
X	WZ



CODE YELLOW

a. List the ANGLES in order from least to greatest.

$\angle H, \angle G, \angle F$

b. What is the value of y ? List the sides in order from least to greatest.

$\overline{RQ}, \overline{RS}, \overline{SQ}$

CODE GREEN

List the angles from least to greatest.

13. \overline{CAB} 14. \overline{GHI} 15. \overline{FED}

List the side lengths from longest to shortest.

9) 10) 11) In $\triangle VWX$
 $m\angle V = 50^\circ$
 $m\angle W = 48^\circ$
 $m\angle X = 82^\circ$

CODE RED

Pine Street, Rector Street, and Taylor Street intersect to form a triangular-shaped park as shown.

What is the correct order of the lengths of the streets from longest to shortest? (SOL 2015)

A Pine, Taylor, Rector
 B Rector, Taylor, Pine
 C Rector, Pine, Taylor
 D Taylor, Pine, Rector

CODE YELLOW

Triangle Facts

The longest side of a triangle must be less than the other two sides added together.

CODE YELLOW

Triangle Facts

The longest side of a triangle must be less than the other two sides added together.

a) 4 m, 8 m, 9 m $4+8=12$ Yes
 b) 10 km, 10 km, 20 km $10+10=20$ No
 c) 7 in, 7 in, 7 in $7+7=14$ Yes
 d) 3 ft, 4 ft, 5 ft $3+4=7$ Yes

CODE GREEN

Which of the following combinations will not make a triangle?

a) 5, 7, 9 Y e) 8, 8, 0.1 Y
 b) 3, 4, 1 N f) 5.2, 5.5, 10.1 Y
 c) 3, 4, 6 Y g) 15, 8, 20 Y
 d) 7, 7, 14 N h) 135, 347, 213 Y

CODE RED

Which could be the lengths of three sides of a triangle?

- A 14 cm, 4.7 cm, 4.7 cm
 B 9 cm, 11 cm, 21 cm
 C 8.5 cm, 17 cm, 10.6 cm
 D 6 cm, 14 cm, 8 cm

$$\begin{array}{r} 8.5 \\ +10.6 \\ \hline 19.1 \end{array}$$

CODE YELLOW

Triangle Facts

When given two side lengths, the range for the third side is between the difference and the sum of the two numbers.

$$\begin{array}{r} 13 \\ -4 \\ \hline 9 \end{array} < x < \begin{array}{r} 13 \\ +4 \\ \hline 17 \end{array}$$

Diff Sum

CODE GREEN

The measure of two sides of a triangle are given. Between what two numbers must the measure of the third side fall?

9. 15 and 20

10. 14 and 24

$$\begin{array}{r} 20 \\ -15 \\ \hline 5 \end{array}$$

$$5 < x < 35$$

11. 22 and 34

$$\begin{array}{r} 20 \\ +15 \\ \hline 35 \end{array}$$

$$10 < x < 38$$

12. 8 and 9

$$12 < x < 56$$

$$1 < x < 17$$

CODE RED

The lengths of two sides of a triangle are 24 in. and 43 in. What is the range of possible lengths, in inches, for the third side, x , of this triangle?



$$19 < x < 67$$

CODE BLUE

KAHOOT!!

CODE RED – EXIT TICKET

Write a paragraph (3-5 sentences) summarizing what you learned in this lesson.

Complete your EXIT TICKET silently and independently at your seat. Remember to do your best and TRY every problem.

When you are finished, raise your hand and Coach Riddick will come around to collect it.