Name _____ Date _____

Determine whether it is possible to draw a triangle with sides of the given measures. Write *yes* or *no*. If yes, draw the triangle.

14. 5, 4, 3 Yes
15. 5.2, 5.6, 10.1 Yes
16. 5, 10, 15 NO
17. 10, 100, 100 Yes
18. 301, 8, 310 NO
19. 9, 40, 41 Yes
20. 12, 2.2, 14.3 NO
21. 10, 150, 200 NO
22. 84, 7, 115 NO

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

23. 15 and 18 3 < 33
24. 14 and 23 9 < 37
25. 22 and 34 12 < 56
26. 21 and 47 26 < 68
27. 64 and 88 22 < 152
28. 99 and 2 97 < 101
29. 47 and 71 24 < 118
30. 104 and 118 14 < 222
31. a and b $|a-b| < (a+b)$

Determine whether it is possible to have a triangle with the given vertices. Write *yes* or *no*, and explain your answer.

38. $R(0, 0), S(3, 5), T(5, 3)$
39. $A(2, 3), B(-5, -11), C(-8, 15)$
40. $J(1, -4), K(-3, -20), L(5, 12)$
41. $D(1, 4), E(5, -1), F(1, -4)$

Use DIST & Slope In addition To graphing

(38) $m_{RS} = \frac{5}{3}$ $m_{ST} = \frac{3}{5}$ Yes

(39) $m_{AB} = \frac{-14}{-7} = 2$ $m_{AC} = \frac{12}{-10} = -\frac{6}{5}$ yes

(40) $m_{JK} = \frac{-16}{-4} = 4$ NO

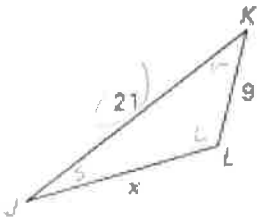
$m_{JL} = \frac{16}{4} = 4$

(41) $m_{DE} = \frac{-5}{4}$ Yes

$m_{DF} = \frac{-8}{0}$

In Exercises 9 and 10, $m\angle J < m\angle K < m\angle L$. Find all possible values of x.

9.

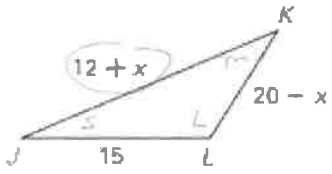


$x + 9 > 21$

$x > 12$

$x < 21$

10.



① $15 + (20 - x) > (12 + x)$

$35 - x > 12 + x$

$23 > 2x$

$11.5 > x$

$15 > 20 - x$

$-5 > -x$

$5 < x$

② $12 + x > 20 - x$

$2x > 8$

$x > 4$

Between 5 & 11.5