Name _____ Date _____

$c^2 \square a^2+b^2$ = right, < acute, > obtuse

LESSON 7.2

Practice

For use with pages 440–447

c is longest side $a+b>c$ → can you form △

Decide whether the numbers can represent the side lengths of a triangle. If they can, classify the triangle as *right*, *acute*, or *obtuse*.

1. 5, 12, 13 — $5+12>13$ ✓

$13^2 \stackrel{?}{=} 5^2+12^2$

$169 \quad 25+144$ Right

169

2. $\sqrt{8}$, 4, 6 — $\sqrt{8}+4>6$ ✓

$6^2 \stackrel{?}{>} (\sqrt{8})^2+4^2$

$36 \quad 8+16$ obtuse

24

3. 20, 21, 28 — $20+21>28$ ✓

$28^2 \stackrel{?}{<} 20^2+21^2$

$784 \quad 400+441$ Acute

4. 15, 36, 39 — $15+36>39$ ✓

$39^2 \stackrel{?}{=} 15^2+36^2$

$1521 \quad 225+1296$ Right

5. $\sqrt{13}$, 10, 12 — $\sqrt{13}+10>12$ ✓

$12^2 \stackrel{?}{>} 10^2+(\sqrt{13})^2$

$144 \quad 100+13$ obtuse

6. 14, 48, 50 — $14+48>50$ ✓

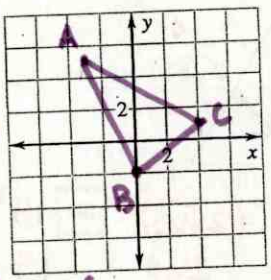
$50^2 \stackrel{?}{=} 14^2+48^2$

$2500 \quad 196+2304$ Right

2500

Graph points *A*, *B*, and *C*. Connect the points to form △*ABC*. Decide whether △*ABC* is *right*, *acute*, or *obtuse*.

7. $A(-3, 5), B(0, -2), C(4, 1)$



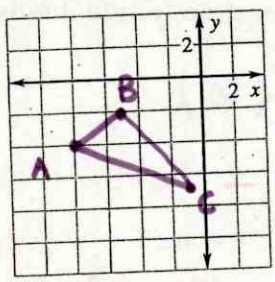
do they form a △

Slope of $\overline{AB} = -\frac{7}{3}$ Acute

$\overline{BC} = \frac{3}{4}$

$\overline{AC} = -\frac{4}{7}$

8. $A(-8, -4), B(-5, -2), C(-1, -7)$



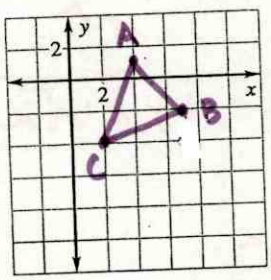
Slope of

$\overline{AB} = \frac{2}{3}$

$\overline{BC} = \frac{-5}{4}$

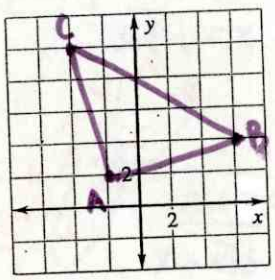
obtuse

9. $A(4, 1), B(7, -2), C(2, -4)$



Acute

10. $A(-2, 2), B(6, 4), C(-4, 10)$



Slope of

$\overline{AB} = \frac{2}{8} = \frac{1}{4}$ ✓

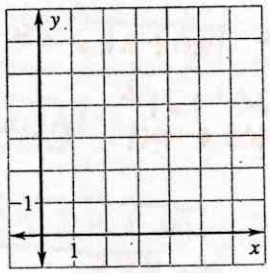
$\overline{AC} = \frac{-8}{2} = \frac{-4}{1}$ ✓

Right

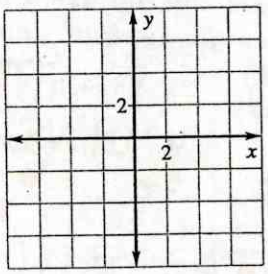
Name _____ Date _____

LESSON 7.2 **Practice** *continued*
For use with pages 440–447

11. $A(0, 5), B(3, 6), C(5, 1)$



12. $A(-2, 4), B(2, 0), C(5, 2)$



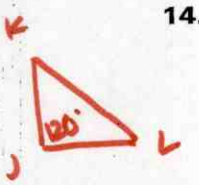
See # 4-10

In Exercises 13 and 14, copy and complete the statement with <, >, or =, if possible. If it is not possible, *explain* why.

13. $m\angle J$? $m\angle R$

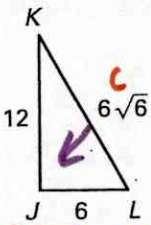
obtuse Right ∠ (90°)

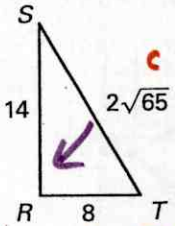
14. $m\angle K + m\angle L$? $m\angle S + m\angle T$



180 − 120
60°

180 − 90
90





$(6\sqrt{6})^2$? $12^2 + 6^2$
216 144 + 36
180
obtuse

$(2\sqrt{65})^2$ = $14^2 + 8^2$
260 196 + 64
260
Right

The sides and classification of a triangle are given below. The length of the longest side is the integer given. What value(s) of *x* make the triangle?

15. $x, x, 8$; right

$8^2 = x^2 + x^2$
$\frac{64}{2} = \frac{2x^2}{2}$
$\sqrt{32} = \sqrt{x^2}$
$x = \sqrt{32}$
$32 = 2 \cdot 16 = 2 \cdot 2 \cdot 8 = 2 \cdot 2 \cdot 2 \cdot 4 = 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2$
$x = 4\sqrt{2}$

16. $x, x, 12$; obtuse

$12^2 > x^2 + x^2$
$144 > 2x^2$
$72 > x^2$
$\sqrt{72}$
$72 = 2 \cdot 36 = 2 \cdot 6 \cdot 6$
$x < 6\sqrt{2}$

17. $x, x, 6$; acute

$6^2 < x^2 + x^2$
$36 < 2x^2$
$18 < x^2$
$x < \sqrt{18}$
$18 = 2 \cdot 9 = 2 \cdot 3 \cdot 3$
$x > 3\sqrt{2}$
$3\sqrt{2} < x$

18. $x, x + 3, 15$; obtuse

19. $x, x - 8, 40$; right

20. $x + 2, x + 3, 29$; acute