Unit 2: Coordinate Geometry Quiz Exemplars!

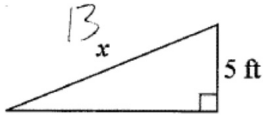
Use these exemplars to examine and grow from your mistakes!

7 8	• Select appropriate mathematics when solving **challenging problems in both familiar and unfamiliar situations.** • Apply the selected mathematics successfully when solving these problems. • Generally solve these problems correctly.			• All problems are solved ***without error*** and detailed work. (8) • Missing side lengths found -Hypotenuse -Leg • Distance found -Algebraically -Shown graphically • Triangle classified -Right, Acute, Obtuse -Equilateral, Isosceles, Scalene

Version 1

1. Solve for the missing side length (round to the nearest tenth).

a)



13

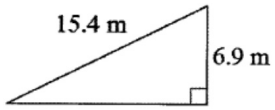
$5^2+12^2=c^2$

$25+144=c^2$

$\sqrt{169}=\sqrt{c^2}$

13=c

b)



b=13.8

$6.9^2+b^2=15.4^2$

$47.61+b^2=237.16$

$-47.61 \quad -47.61$

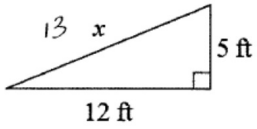
$\sqrt{b^2}=\sqrt{189.55}$

Missing units (ft and m)

Version 1

1. Solve for the missing side length (round to the nearest tenth).

a)



$a^2 + b^2 = c^2$

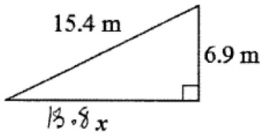
$12^2 + 5^2 = x^2$

$144 + 25 = x$

$\sqrt{169} = x$

$X = 13$

b)



$6.9^2 + b^2 = 15.4^2$

$b^2 = 8.5^2$

$47.61 + b = 237.16$

$b^2 = 223.3$

$6.9^2 + 8.5^2 = 15.4^2$

$X = 13.8$

Missing units (ft and m)

Version 1

2. Solve for the distance between two points **graphically and algebraically.**

$(8, 8), (-5, 3)$

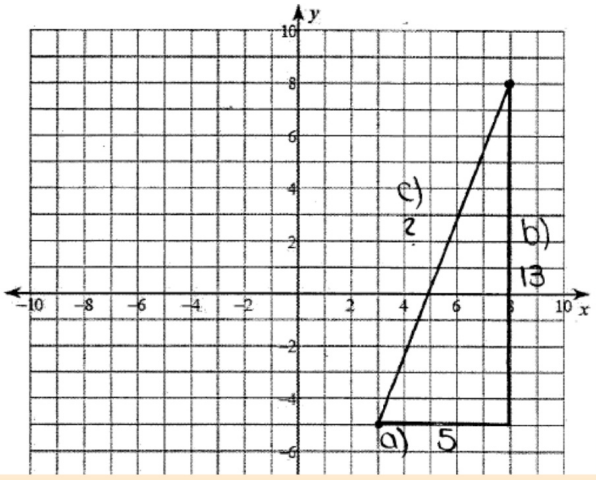
$a^2 + b^2 = c^2$

$5^2 + 13^2 = c^2$

$25 + 169 = c^2$

$194 = c^2$

$c = \sqrt{194}$ or $c = 13.93$



Version 1

2. Solve for the distance between two points **graphically and algebraically.**

$(8, 8), (-5, 3)$ $\quad d = \sqrt{(y_2 - y_1)^2 + (x_2 - x_1)^2}$

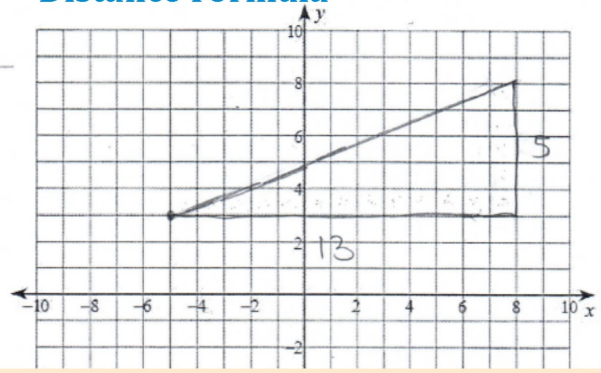
Distance Formula

$d = \sqrt{(8-3)^2 + (8--5)^2}$

$d = \sqrt{5^2 + 13^2}$

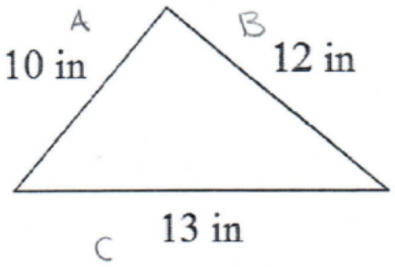
$d = \sqrt{25 + 169}$

$d = \sqrt{194}$



Version 1

3. State if the triangle is acute, obtuse, or right. **Show all work.**



$A^2 + B^2 = C^2$

$10^2 + 12^2 \neq 13^2$

$100 + 144 \neq 169$

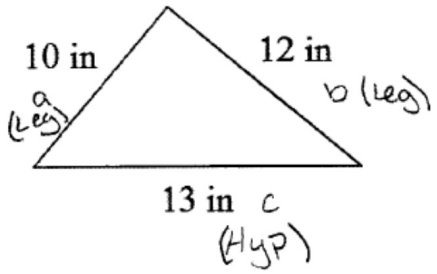
$244 \neq 169$

$244 > 169$

acute

Version 1

3. State if the triangle is acute, obtuse, or right. **Show all work.**



$a^2 + b^2 \neq c^2$

$10^2 + 12^2 \neq 13^2$

$100 + 144 \neq 169$

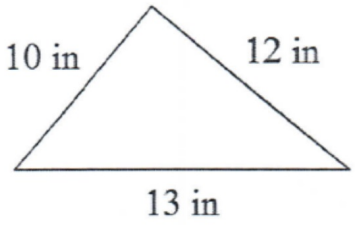
$244 > 169$

$c^2 < a^2 + b^2$ that's a acute angle

acute because. When c^2 is less than what $a^2 + b^2$ (=) than the angle is smaller

Version 1

3. State if the triangle is acute, obtuse, or right. **Show all work.**



$10^2 + 12^2 \boxed{?} 13^2$

$100 + 144 \boxed{?} 169$

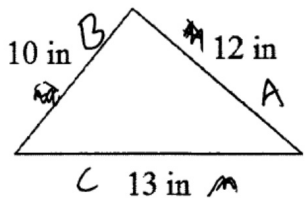
$244 \boxed{\neq} 169$

$244 \boxed{>} 169$

It is acute.

Version 1

3. State if the triangle is acute, obtuse, or right. **Show all work.**



$12 \times 12 = 144$
$10 \times 10 = 100$
$13 \times 13 = 169$

Right triangle: $a^2 + b^2 = c^2$

$12^2 + 10^2 = 13^2$

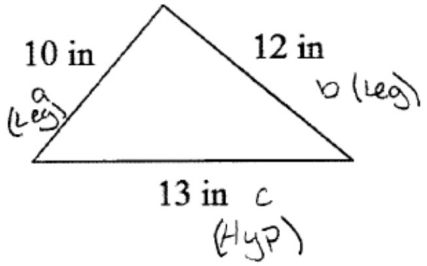
$144 + 100 \neq 169$

$169 < 244$

< means acute

Version 1

3. State if the triangle is acute, obtuse, or right. **Show all work.**



$a^2 + b^2 \neq c^2$

$10^2 + 12^2 \neq 13^2$

$100 + 144 \neq 169$

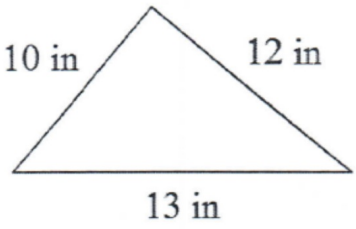
$244 > 169$

$c^2 < a^2 + b^2$ that's a acute angle

acute because. When c^2 is less than what $a^2 + b^2$ (=) than the angle is smaller

Version 1

3. State if the triangle is acute, obtuse, or right. **Show all work.**



$10^2 + 12^2$ [?] 13^2

$100 + 144$ [?] 169

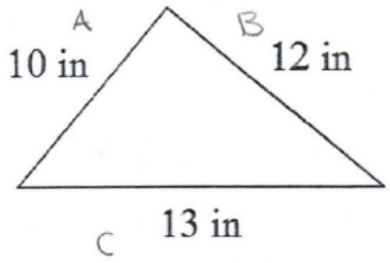
244 [≠] 169

244 [>] 169

It is acute.

Version 1

3. State if the triangle is acute, obtuse, or right. **Show all work.**



$A^2 + B^2 = C^2$

$10^2 + 12^2 \stackrel{?}{=} 13^2$

$100 + 144 \stackrel{?}{=} 169$

$244 \stackrel{?}{=} 169$

$244 > 169$

acute

Version 1

4. Explain if the triangle is isosceles, equilateral, or scalene using the **lengths** of the sides.

A(2, -4), **B**(2, 1), **C**(5, -1)

$AB^2 = 5^2 - 0$

$AB^2 = 25$

$AB = \sqrt{25}$

$AB = 5$

$BC^2 = 3^2 + 2^2$

$BC^2 = 9 + 4$

$BC^2 = 13$

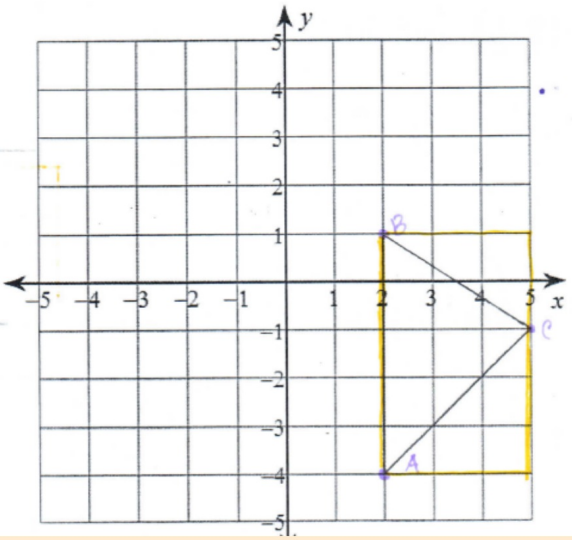
$BC = \sqrt{13}$

$AC^2 = 3^2 + 3^2$

$AC^2 = 9 + 9$

$AC^2 = 18$

$AC = \sqrt{18}$



Version 1

4. Explain if the triangle is isosceles, equilateral, or scalene using the **lengths** of the sides.

A(2, -4), B(2, 1), C(5, -1)

$d = \sqrt{(x_1 - x_2)^2 + (y_2 - y_1)^2}$

$d = \sqrt{(2-5)^2 + (-1+4)}$

$d = \sqrt{-3^2 + 3^2}$

$d = \sqrt{9+9} =$

$\sqrt{18}$

B(2,1) C(5,-1)

$d\sqrt{(x_1 - x_2)^2 + (y_2 - y_1)^2}$

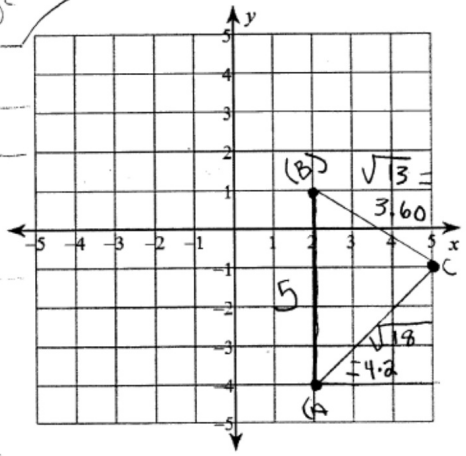
$d\sqrt{(2-5)^2 + (-1-1)^2}$

$d\sqrt{-3^2 + -2^2}$

$d = \sqrt{9+4}$

$d\sqrt{13}$

A(2,-4) (5,-1)



$\sqrt{13} = 3.60$

$\sqrt{18} = 4.2$

Scalene

Version 1

$AB = \sqrt{(2-2)^2 + (1+4)^2}$

$AB = \sqrt{0 + 25}$

$AB = \sqrt{25}$ or 5

$BC = \sqrt{(5-2)^2 + (-1-1)^2}$

$BC = \sqrt{3^2 + 2^2}$

$BC = \sqrt{9+4}$

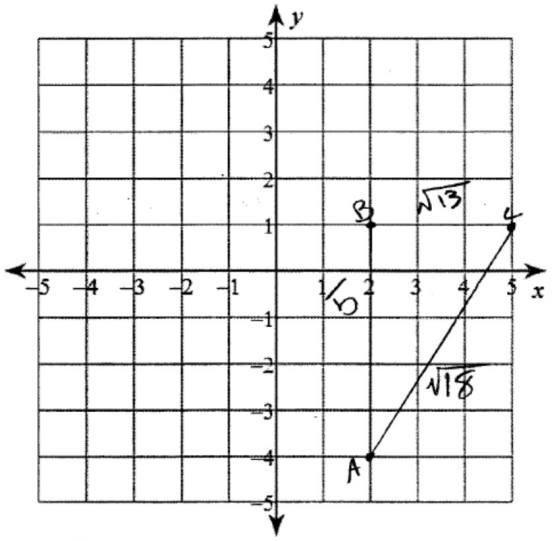
$BC = \sqrt{13}$

$CA = \sqrt{(2-5)^2 + (-4+1)^2}$

$CA = \sqrt{-3^2 + -3^2}$

$CA = \sqrt{9+9}$

$CA = \sqrt{18}$

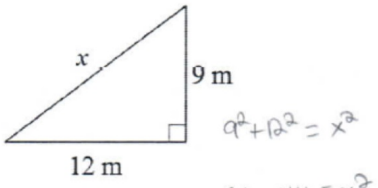


SCALENE

Version 2

1. Solve for the missing side length (round to the nearest tenth).

a)



$a^2+b^2=c^2$

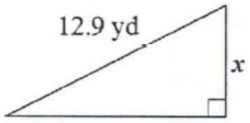
$9^2+12^2=x^2$

$81+144=x^2$

$225=x^2$

$15=x$

b)



$11.5^2+x^2=12.9^2$

$132.25+x^2=166.41$

-132.25

$\sqrt{x^2}=\sqrt{34.16}$

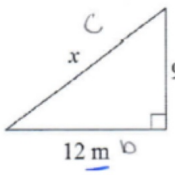
$x=5.84$

Missing units (m and yd)

Version 2

1. Solve for the missing side length (round to the nearest tenth).

a)



$a^2+b^2=c^2$

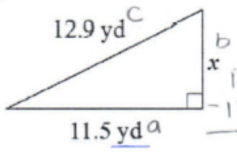
$9^2+12^2=c^2$

$81+144=225$

$\sqrt{225}\approx 15$

$c=15$

b)



$c^2=a^2+b^2$

$11.5^2+x^2=12.9^2$

$132.25+x^2=166.41$

$-132.25 \quad -132.25$

$x^2=34.16$

$\sqrt{x^2} \quad x^2$

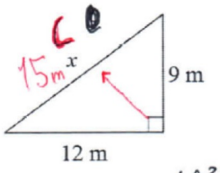
$x=5.84$

Version 2

1. Solve for the missing side length (round to the nearest tenth).

$a^2+b^2=c^2$

a)



C

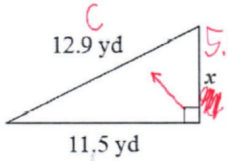
$12^2+9^2=c^2$

$144+81=c^2$

$\sqrt{225}=\sqrt{c^2}$

$15=c$

b)



C

5.844655678

$11.5^2+x^2=12.9^2$

$132.25+x^2=166.41$

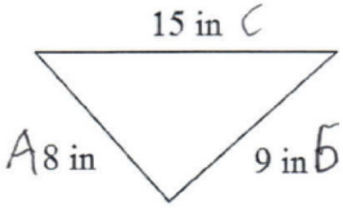
$-132.25 \quad -132.25$

$\sqrt{x^2}=\sqrt{34.16}$

$x=5.844655$

Version 2

3. State if the triangle is acute, obtuse, or right. **Show all work.**



$8^2 + 9^2 \stackrel{?}{=} 15^2$

$64 + 81 \stackrel{?}{=} 225$

$145 < 225$

Version 2

2. Solve for the distance between two points **graphically and algebraically.**

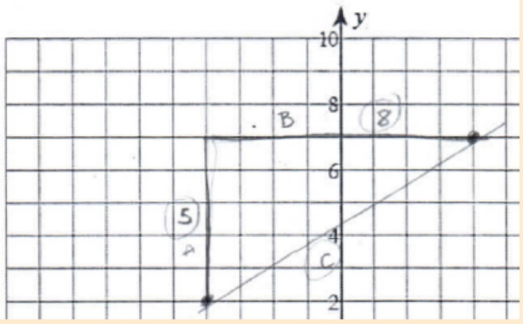
(4, 7), (-4, 2)

$c^2 = b^2 + a^2$

$c^2 = 5^2 + 8^2$

$c^2 = 25 + 64$

$c^2 = 89 \approx 9.433$



Version 2

2. Solve for the distance between two points **graphically and algebraically.**

(4, 7), (-4, 2)

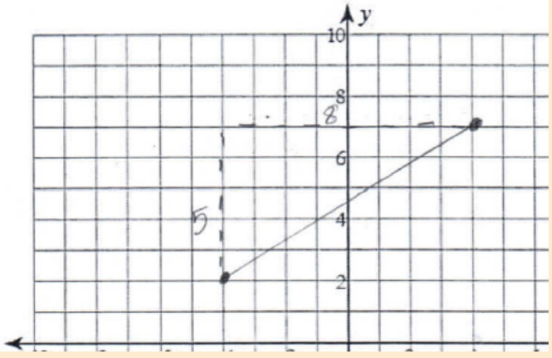
$5^2 + 8^2 = c^2$

$25 + 64 = c^2$

$89 = c^2$

$c = 9.4$

$\approx$



Version 2

4. Explain if the triangle is isosceles, equilateral, or scalene using the **lengths** of the sides.

A(-2, -1), **B**(-2, 5), **C**(2, 2)