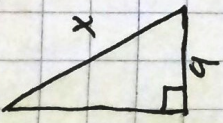


Math 8 Only 😊

① Find the missing variable



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

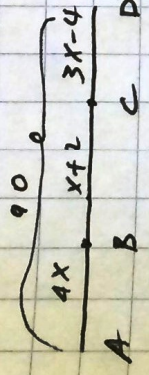
$$81 + 144 = x^2$$

$$169 = x^2$$

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

$$13 = x$$

② Find x and all dimensions



$$AB + BC + CD = AD$$

$$4x + x + 2 + 3x - 4 = 90$$

$$8x - 2 = 90$$

$$+2 \quad +2$$

$$8x = 92$$

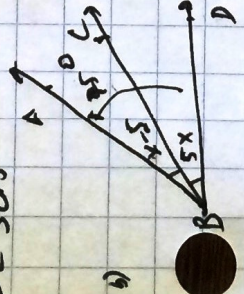
$$\frac{8x}{8} = \frac{92}{8}$$

$$x = 11.5$$

$$AB = 46$$

$$BC = 13.5$$

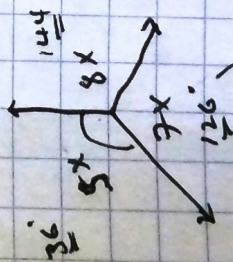
$$CD = 30.5$$



$$\angle ABC = 81.3^\circ$$

$$\angle CBD = 66.7^\circ$$

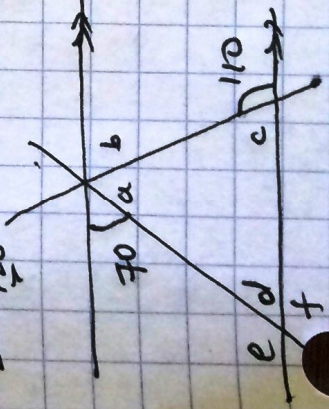
③ Find x



$$5x + 5x + 7x = 360^\circ$$

$$\frac{20x}{20} = \frac{360}{20}$$

$$x = 18$$



$$d = 70^\circ$$

$$c = 70^\circ$$

$$a = 40^\circ$$

$$b = 70^\circ$$

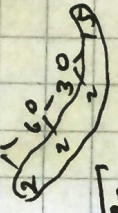
$$f = 110^\circ$$

Complement of 40° is 50°
 Supplement of 160° is 20°

1) Simplify:

$$a) \sqrt{120} = \sqrt{4 \cdot 30} = 2\sqrt{30}$$

$$b) \sqrt{140} + \sqrt{90} = 2\sqrt{35} + 3\sqrt{10} = 5\sqrt{10}$$



2) What type of triangle is this

$$3, 7, 9$$

$$\frac{a^2 + b^2}{c^2} = \frac{3^2 + 7^2}{9^2} = \frac{9 + 49}{81} = \frac{58}{81}$$

$$58 < 81 \Rightarrow \text{Obtuse}$$

3) Find slope, Eq, int, distance & mid point $P_1(-4, 2)$ $P_2(1, 5)$

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{5 - 2}{1 - (-4)} = \frac{3}{5}$$

$$y - y_1 = m(x - x_1)$$

$$y - 2 = \frac{3}{5}(x - (-4))$$

$$y - 2 = \frac{3}{5}x + \frac{12}{5} + \frac{2}{5}$$

$$y = \frac{3}{5}x + 22$$

$$y = \frac{3}{5}x + 22$$

$$x \cdot 5 = x \cdot 5$$

$$5y = 3x + 22$$

$$-3x + 5y = 22$$

$$x - 1 \quad x - 1 \quad x - 1$$

$$3x - 5y = -22$$

Intercepts (x, y)

$$3x - 5y = -22$$

$$3(0) - 5y = -22$$

$$-5y = -22$$

$$\frac{-5y}{-5} = \frac{-22}{-5}$$

$$y = 4.4$$

$$C(0, 4.4)$$

Distance

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

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

$$= \sqrt{5^2 + 3^2}$$

$$= \sqrt{25 + 9}$$

$$= \sqrt{34}$$

Mid point

$$\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}$$

$$\left(\frac{-4 + 1}{2}, \frac{2 + 5}{2} \right)$$

$$\left(-\frac{3}{2}, \frac{7}{2} \right)$$

$$(-1.5, 3.5)$$

