$AB = 2x + 8$ and $BC = 6x - 28$

$(2x + 8) + (6x - 28)$

$2x + 8 + 6x - 28$

$8x - 20$

$2x + 8 = 6x - 28$

$2x + 36 = 6x$

$-2x \quad -2x$

$\frac{36}{4} = \frac{4x}{4}$

$x = 9$

$AB + BC$

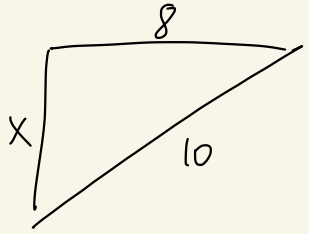
$(2x + 8) + (6x - 28)$

$(2(9) + 8) + (6(9) - 28)$

$(18 + 8) + (54 - 28)$

$26 + 26$

52



$x^2 + 8^2 = 10^2$

$x^2 + 64 = 100$

$-64 \quad -64$

$x^2 = 36$

$x = 6$

$6x + 175° = 3x + 127°$

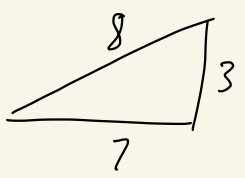
$-3x \quad -3x$

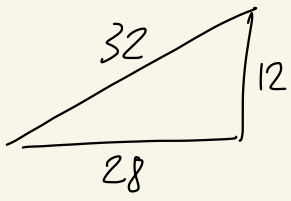
$3x + 175° = 127°$

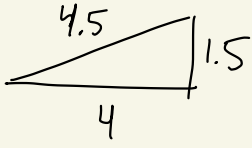
$-175 \quad -175$

$\frac{3x}{3} = \frac{-48}{3}$

$\boxed{x = -16}$







$6x + 2 = 5x + 3$

$-5x - 3 \quad -5x - 3$

$x - 1 = 0$

$+1$

$x = 1$

$(6(1) + 2) + (5(1) + 3)$

$6 + 2 \qquad 5 + 3$

$8 \quad + \quad 8$

$\boxed{16}$

$(6x - 12) + (3x + 30) = 90$

$6x - 12 + 3x + 30 = 90$

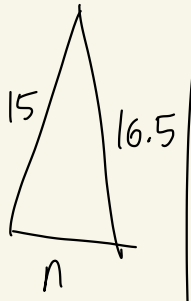
$9x + 18 = 90$

$-18 \quad -18$

$\frac{9x}{9} = \frac{72}{9}$

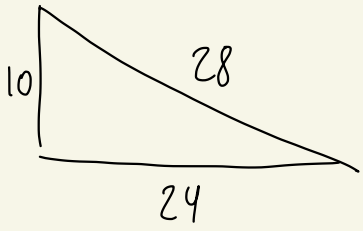
$x = 8$

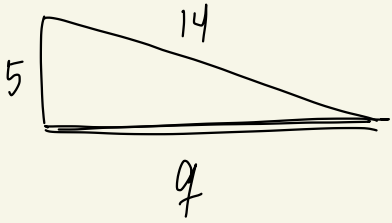
$6x - 12 = 6(8) - 12 = 48 - 12 = \boxed{36°}$



$$\frac{5}{2.5} = \frac{15}{n}$$

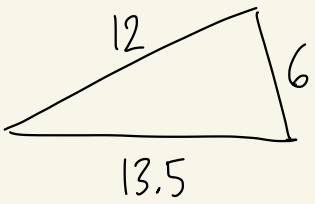
$n = 7.5$

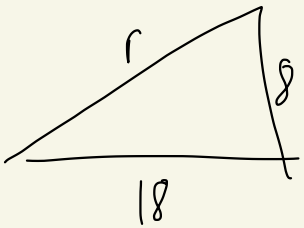




$$\frac{28}{24} = \frac{14}{9}$$

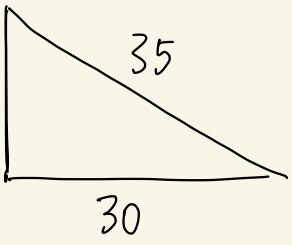
$9 = 12$

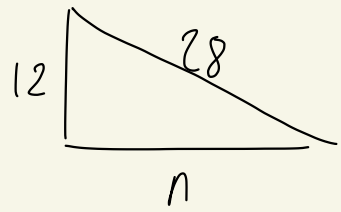




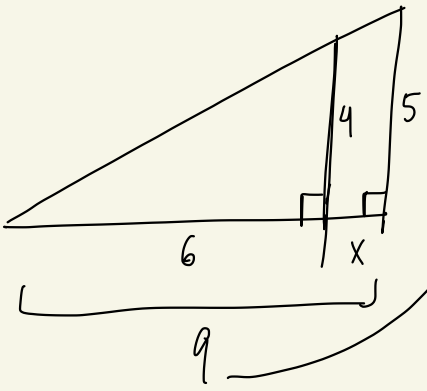
$$\frac{12}{13.5} = \frac{r}{18}$$

$r = 16$





$$\frac{35}{30} = \frac{28}{n} \qquad \boxed{n = 24}$$

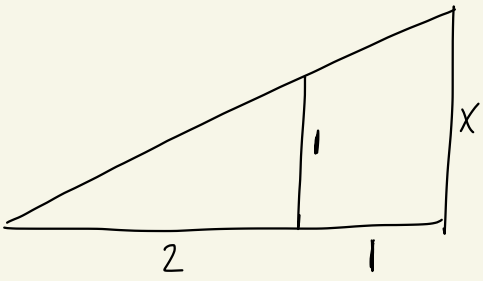


$$\frac{6}{4} = \frac{q}{5}$$

$$6 \cdot 5 = 30$$

$$30/4 = \frac{15}{2}$$

$$\frac{15}{2} - \frac{6}{1} = \frac{15}{2} - \frac{12}{2} = \boxed{\frac{3}{2}}$$

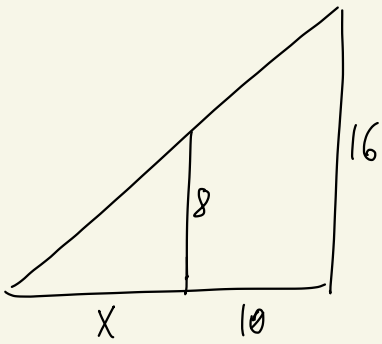


$$X = \frac{3}{2}$$

$$\frac{2}{1} = \frac{2+1}{x} \Rightarrow \frac{2}{1} = \frac{3}{x}$$

$$3 \cdot 1 = 3$$

$$3/2 = \frac{3}{2}$$



$$\frac{x}{8} = \frac{x+10}{16}$$

$$16 \cdot x = 8(x+10)$$

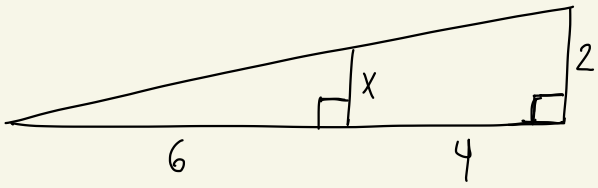
$$16x = 8x + 80$$

$$16x = 8x + 80$$

$$-8x \quad -8x$$

$$\frac{8x}{8} = \frac{80}{8}$$

$$x = 10$$



$$\frac{x}{6} = \frac{2}{6+4} = \frac{x}{6} = \frac{2}{10} \qquad 2 \cdot 6 = 12$$

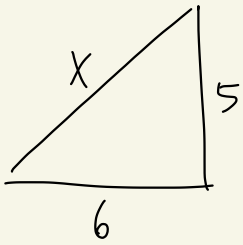
$$12/10 = \boxed{6/5}$$

$$6x + 34 = 8x + 14$$
$$-6x \quad -34 \quad -6x \quad -34$$

$$0 = 2x - 20$$
$$+20 \qquad +20$$

$$\frac{20}{2} = \frac{2x}{2}$$

$$\boxed{x = 10}$$



$$6^2 + 5^2 = x^2$$
$$36 + 25 = x^2$$
$$61 = x^2$$

$$\boxed{x = \sqrt{61}}$$

$8x-5=7x+3$

$-7x-3 \quad -7x-3$

$x-8=0$

$+8 \quad +8$

$x=8$

$(8x-5)+(7x+3)$

$(8(8)-5)+(7(8)+3)$

$64-5+56+3$

$59+56+3$

$\boxed{118}$

$\frac{2}{6}=\frac{x}{6+4} \Rightarrow \frac{2}{6}=\frac{x}{10}$

$10 \cdot 2 = 20$

$\frac{20}{6}=\frac{10}{3}$

$9x + 44 + 6x + 3 = 77$

$15x + 47 = 77$

$-47 \quad -47$

$\frac{15x}{15} = \frac{30}{15}$

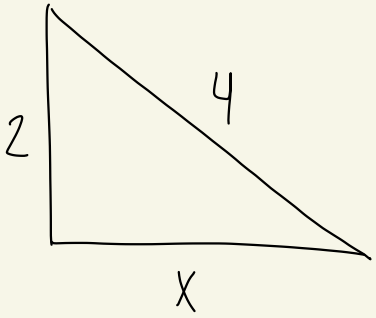
$\boxed{x = 2}$

$6x + 3$

$6(2) + 3$

$12 + 3$

$\boxed{15}$



$2^2 + x^2 = 4^2$

$4 + x^2 = 16$

$-4 \quad -4$

$x^2 = 12$

$\boxed{x = \sqrt{12}}$

$3x - 1 = 2x + 8$

$-2x - 8 \quad -2x - 8$

$x - 9 = 0$

$x = 9$

$3x - 1 + 2x + 8$

$3(9) - 1 + 2(9) + 8$

$27 - 1 + 18 + 8$

$26 + 18 + 8$

$\boxed{52}$

$6x + 11 + 7x + 143 = 180$

$13x + 154 = 180$

$-154 \quad -154$

$\frac{13x}{13} = \frac{26}{13}$

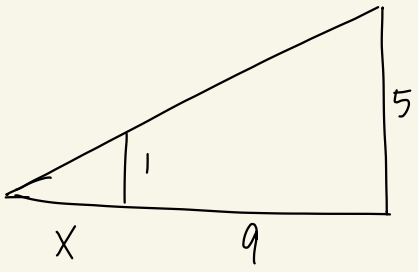
$\boxed{x = 2}$

$6x + 11$

$6(2) + 11$

$12 + 11$

$\boxed{23}$



$\frac{1}{x} = \frac{5}{9+x}$

$1(9+x) = 5x$

$9 + x = 5x$

$-x$

$\frac{9}{4} = \frac{4x}{4}$

$\boxed{x = \frac{9}{4}}$

$4x + 66 = 7x + 15$

$-4x \quad -4x$

$66 = 3x + 15$

$-15 \quad -15$

$\frac{51}{3} = \frac{3x}{3}$

$\boxed{x = 17}$

$12^2 + x^2 = 13^2$

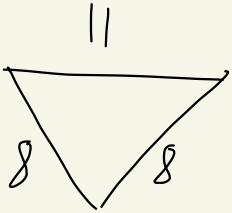
$144 + x^2 = 169$

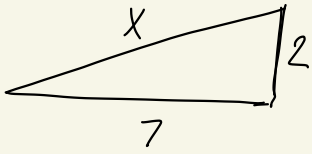
$-144 \quad -144$

$x^2 = 25$

$x = \sqrt{25}$

$\boxed{x = 5}$





$7^2 + 2^2 = x^2$

$49 + 4 = x^2$

$53 = x^2$

$\boxed{x = \sqrt{53}}$