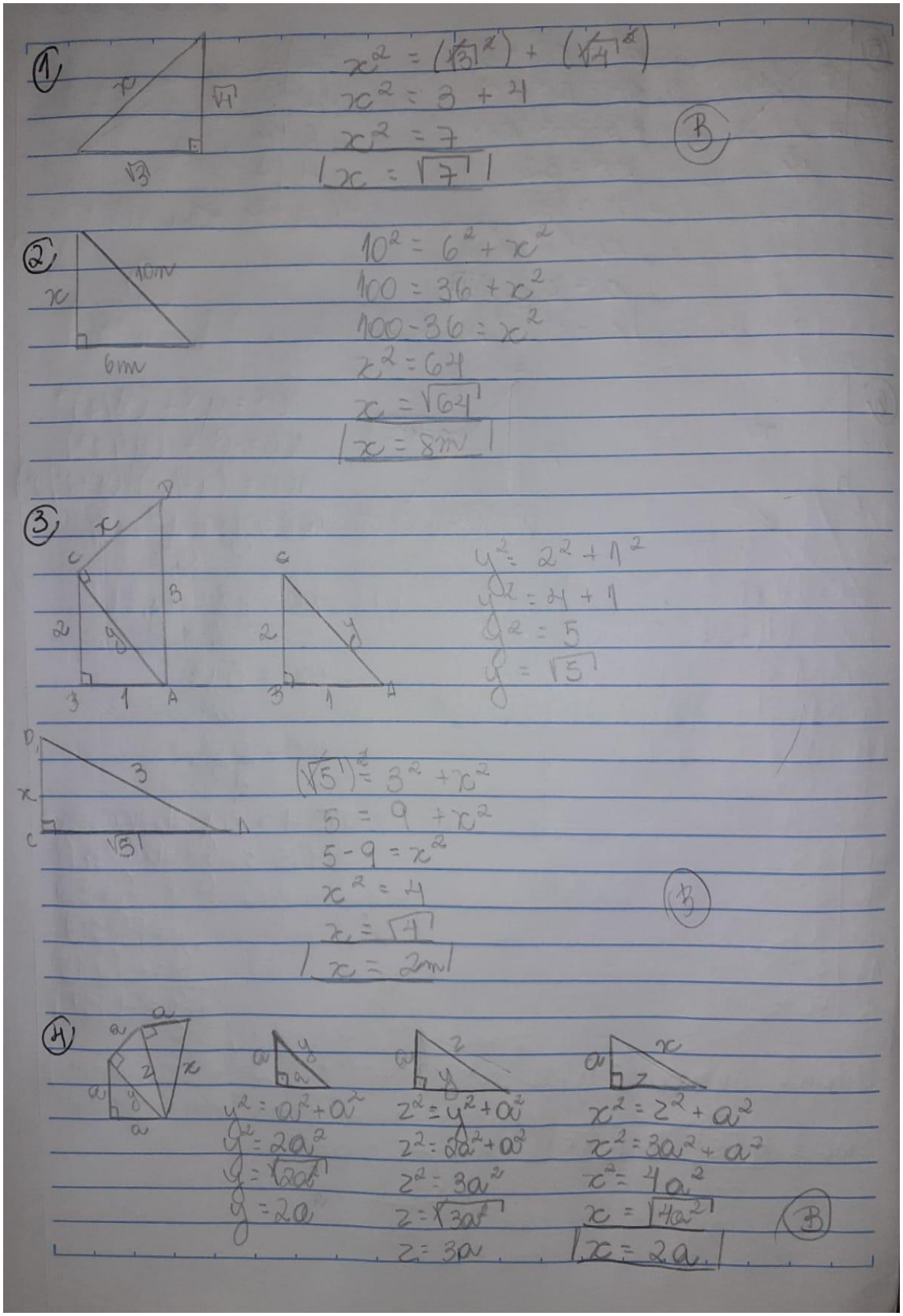
Evelyn Santos de Santana

CTII348

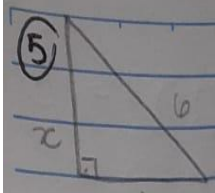
Triângulo Retângulo



data • •

S T Q Q S S D

⑤



$6^2 = x^2 + 2^2$

$36 = x^2 + 4$

$36 - 4 = x^2$

$x^2 = 32$

$x = \sqrt{32}$

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

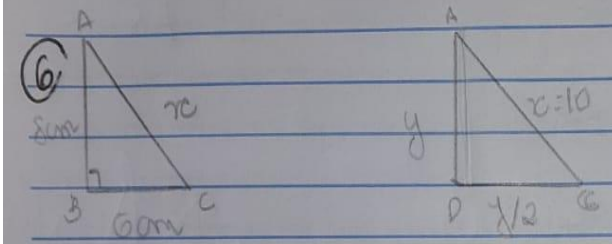
$x = 2 \cdot 2\sqrt{2}$

$\boxed{x = 4\sqrt{2}}$

32	2
16	2
8	2
4	2
2	2

(C)

⑥



$x^2 = 8^2 + 6^2$

$x^2 = 64 + 36$

$x^2 = 100$

$x = \sqrt{100}$

$\boxed{x = 10}$

$10^2 = y^2 + (y/2)^2$

$100 = y^2 + (y^2/2^2)$

$100 = (4y^2/2^2) + (y^2/2^2)$

$100 = \frac{4y^2 + y^2}{2^2}$

$100 = \frac{5y^2}{2^2}$

$100 = \frac{5y^2}{4}$

$100 \cdot 4 = 5y \Rightarrow 400 = 5y^2$

$400/5 = y^2 \Rightarrow y^2 = 80$

$y = \sqrt{80}$

$y = \sqrt{2^2 \cdot 2^2 \cdot 5}$

$y = 2 \cdot 2\sqrt{5}$

$\boxed{y = 4\sqrt{5}}$

80	2
40	2
20	2
10	2
5	5

O menor cateto é $y/2$, então

$mc = \frac{4\sqrt{5}}{2} = \boxed{2\sqrt{5}}$

(A)

data • •

S T Q Q S S D

(7) A aranha está a 2m do poste, com velocidade de 16 cm/s;

2m é igual a 200cm, então

$E_A = 200 - 16t$

A formiga sobre o poste a velocidade de 10cm/s, então, $E_P = 10t$

FORMULA

$d^2 = E_A^2 + E_P$

$d^2 = (200 - 16t)^2 + (10t^2)$

$d^2 = 40000 + 256t^2 - 6400t + 100t^2$

$d^2 = 356t^2 - 6400t + 40000$

A DISTÂNCIA APÓS 5s

$d^2 = (356.5^2) - (6400.5) + 40000$

$d^2 = 356.24 - 6400.5 + 40000$

$d^2 = 8900 - 32.000 + 40000$

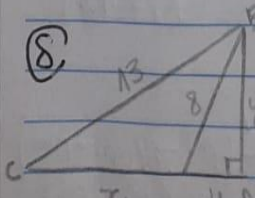
$d^2 = -23.100 + 40000$

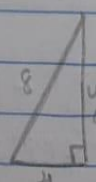
$d^2 = 16.900$

$d = \sqrt{16.900}$

$d = 130\ cm = \boxed{1,3\ m}$

(8)





$8^2 = y^2 + 4^2$

$64 = y^2 + 16$

$64 - 16 = y^2$

$y^2 = 48$

$y = \sqrt{2^4 \cdot 2^2 \cdot 3}$

$y = 2.2\sqrt{3}$

$y = 4\sqrt{3}$

48 | 2	2
24 | 2	2
12 | 2	
6 | 2	
3 | 3	-3

$13^2 = (x+1)^2 + (4\sqrt{3})^2$

$169 = x^2 + 8x + 16 + (16 \cdot 3)$

$169 = x^2 + 8x + 16 + 48$

$169 = x^2 + 8x + 64$

$x^2 + 8x + 64 - 169 = 0$

$x^2 + 8x - 105 = 0$

$\Delta = 8^2 - 4 \cdot 1 \cdot (-105)$

$\Delta = 64 + 420$

$\Delta = 484$

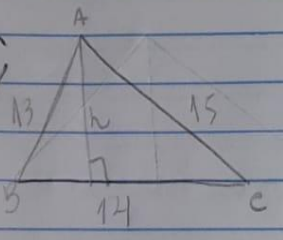
$x = \frac{-8 \pm \sqrt{484}}{2 \cdot 1} = \frac{-8 \pm 22}{2}$

$x1 = \frac{-8 - 22}{2} = \frac{-30}{2} = -15 \notin \mathbb{N}$ convem

$x2 = \frac{-8 + 22}{2} = \frac{14}{2} = 7$

$\boxed{x = 7}$ (D)

(9)



FORMULA DE HERON

$p = \frac{(13 + 14 + 15)}{2} = \frac{42}{2} = 21$

$A = \sqrt{21(21-13)(21-14)(21-15)}$

$A = \sqrt{21 \cdot 8 \cdot 7 \cdot 6}$

$A = \sqrt{7056}$

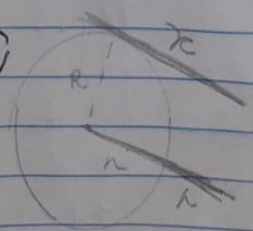
$A = 84$

$A = \frac{b \cdot h}{2} \Rightarrow 84 = \frac{14 \cdot h}{2} \Rightarrow 84 = 7h \Rightarrow h = \frac{84}{7}$

$h = \frac{84}{7}$

$\boxed{h = 12}$

(10)



$x^2 = (r + r')^2 - (r - r')^2$

$x^2 = (r^2 + 2rr' + r'^2) - (r^2 - 2rr' + r'^2)$

$x^2 = r^2 - r^2 + 2rr' - 2rr' + r'^2 - r'^2$

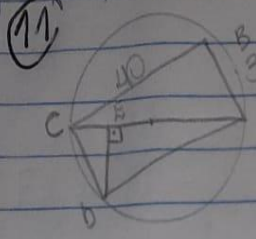
$x^2 = 2rr' + 2rr'$

$x^2 = 4rr'$

$x = \sqrt{4rr'}$

$\boxed{x = 2\sqrt{rr'}}$

11)



$CA^2 = 30^2 + 40^2$

$CA^2 = 900 + 1600$

$CA^2 = 2500$

$CA = \sqrt{2500}$

$CA = 50$

$CD = AC \cdot CE$

$20^2 = 50 \cdot CE$

$400 = 50CE$

$CE = 400/50$

$\boxed{CE = 8}$

(C)