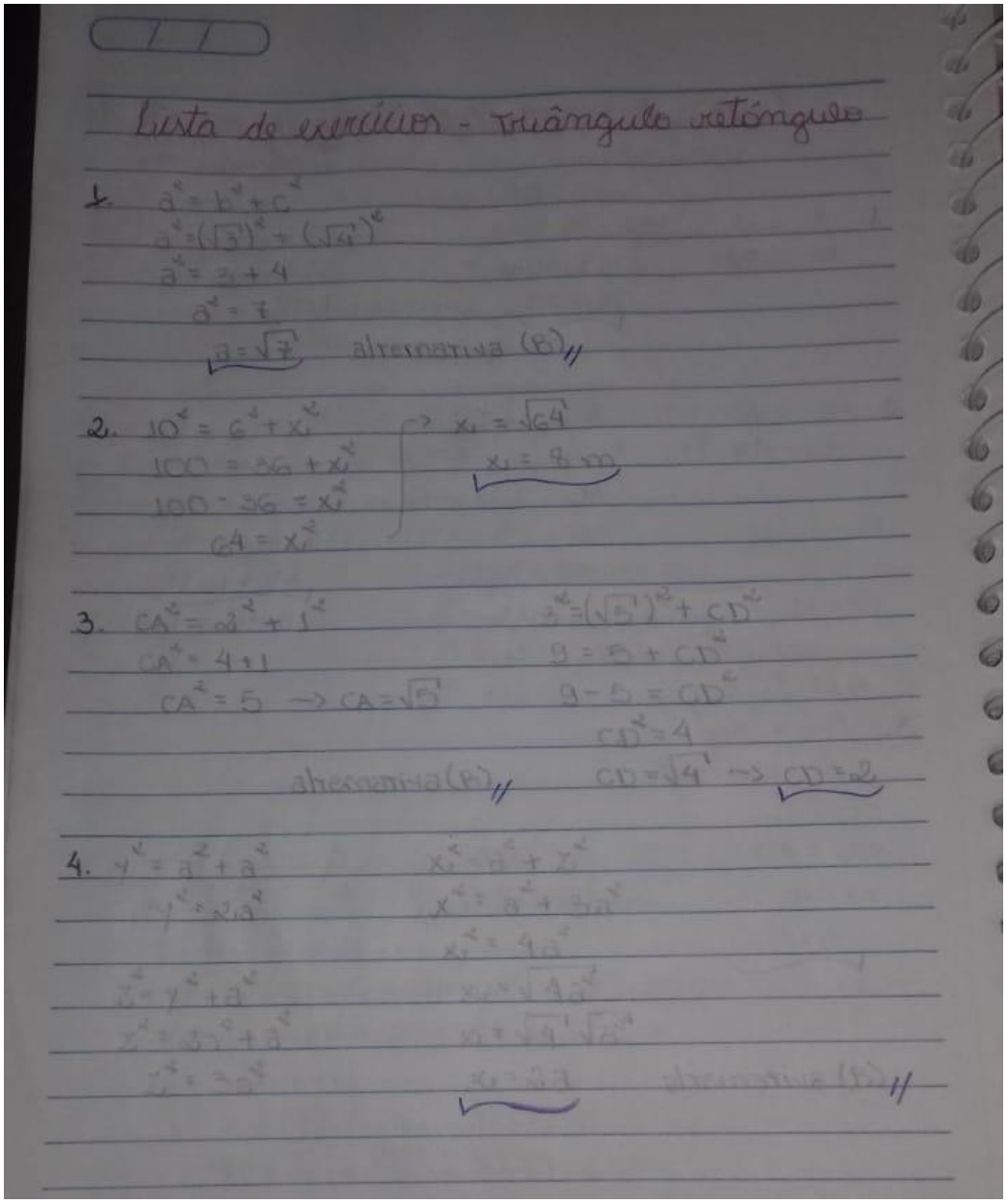
ALUNO(A): Sabrina Vitória Pereira de Souza Ribeiro CTII350



Lista de exercícios - Triângulo retângulo

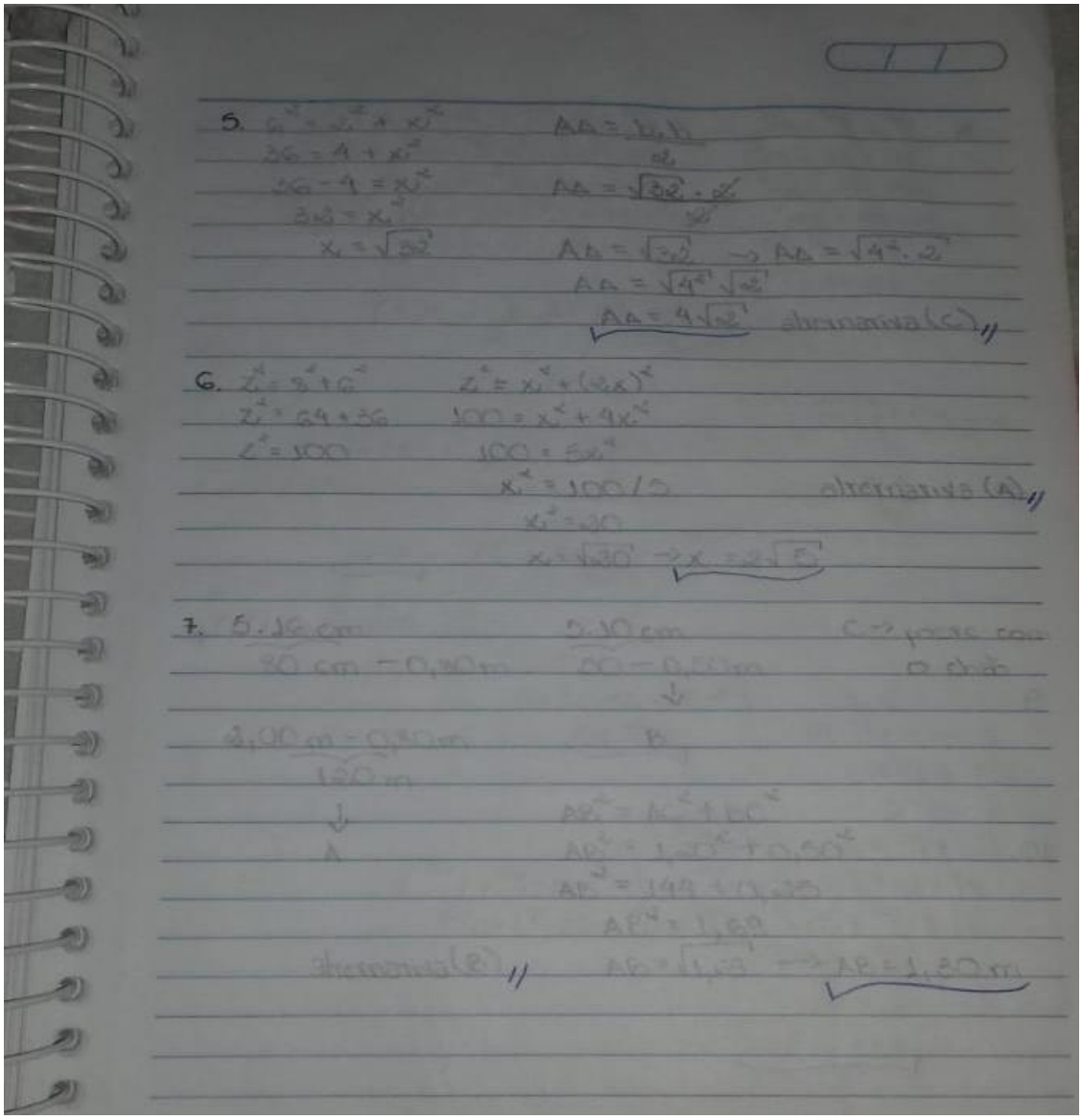
1. $a^2 = b^2 + c^2$
$a^2 = (\sqrt{3})^2 + (\sqrt{4})^2$
$a^2 = 3 + 4$
$a^2 = 7$
$a = \sqrt{7}$ alternativa (B)

2. $10^2 = 6^2 + x_1^2$
$100 = 36 + x_1^2$
$100 - 36 = x_1^2$
$64 = x_1^2$
$\rightarrow x_1 = \sqrt{64}$
$x_1 = 8$ m

3. $CA^2 = 2^2 + 1^2$
$CA^2 = 4 + 1$
$CA^2 = 5 \rightarrow CA = \sqrt{5}$
alternativa (B)

$3^2 = (\sqrt{5})^2 + CD^2$
$9 = 5 + CD^2$
$9 - 5 = CD^2$
$CD^2 = 4$
$CD = \sqrt{4} \rightarrow CD = 2$

4. $y^2 = a^2 + a^2$
$y^2 = 2a^2$
$x^2 = y^2 + a^2$
$x^2 = 2a^2 + a^2$
$x^2 = 3a^2$
$x_1^2 = a^2 + x^2$
$x^2 = a^2 + 3a^2$
$x_1^2 = 4a^2$
$x_1 = \sqrt{4a^2}$
$x_1 = \sqrt{4}\sqrt{a^2}$
$x_1 = 2a$ alternativa (B)



5. $6^2 = 2^2 + x^2$ $AA = 2x\sqrt{2}$

$36 = 4 + x^2$ $AA = \sqrt{32} \cdot \sqrt{2}$

$36 - 4 = x^2$ $AA = \sqrt{2^4 \cdot 2} \rightarrow AA = \sqrt{4^2 \cdot 2}$

$32 = x^2$ $AA = \sqrt{4^2}\sqrt{2}$

$x = \sqrt{32}$ $AA = 4\sqrt{2}$ alternativa (c)

6. $z^2 = 8^2 + 6^2$ $z^2 = x^2 + (2x)^2$

$z^2 = 64 + 36$ $100 = x^2 + 4x^2$

$z^2 = 100$ $100 = 5x^2$

$x^2 = 100/5$ alternativa (A)

$x^2 = 20$

$x = \sqrt{20} \rightarrow x = 2\sqrt{5}$

7. 5.16 cm 5.10 cm C → ponto com o chão

80 cm = 0,80 m 80 = 0,80 m

3,00 m = 0,30 m B

120 m

A $AB^2 = AC^2 + BC^2$

$AB^2 = 1,20^2 + 0,60^2$

$AB^2 = 144 + 0,36$

$AB^2 = 1,69$

alternativa (B) $AB = \sqrt{1,69} \rightarrow AB = 1,30$ m

8. $8^2 = 4^2 + AB^2$

$64 = 16 + AB^2$

$64 - 16 = AB^2$

$48 = AB^2$

$AB = \sqrt{48}$

$AB = 4\sqrt{3}$ m

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

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

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

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

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

$\Delta = 64 - 4 \cdot 1 \cdot (-105)$

$\Delta = 64 + 420$

$\Delta = 484$

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

$x_1 = \frac{-8 - 22}{2}$

$x' = \frac{-8 - 22}{2} = \frac{-30}{2} = -15$ (não convém)

$x'' = \frac{-8 + 22}{2} = \frac{14}{2} = 7$ m

alternativa (D)

9. $h = b \cdot c$

$16 \cdot h = 15 \cdot 14$

$16h = 192$

$h = 210/16$

$h = 12$

10. $(r+r)^2 = x^2 + (r+r)^2$

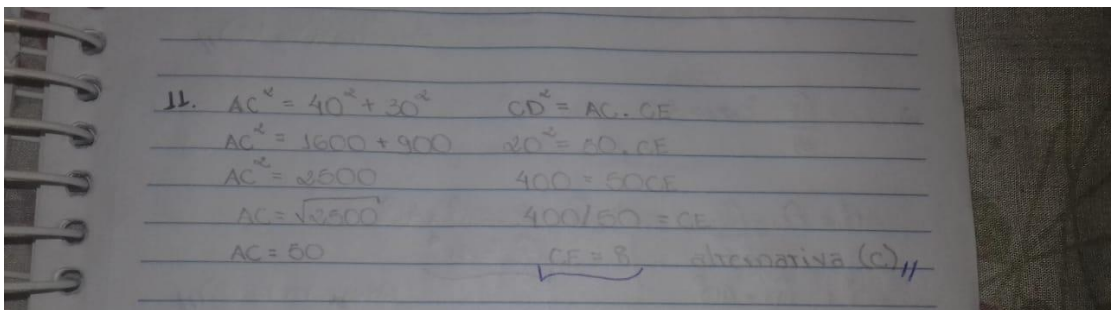
$x^2 = (r^2 + 2rr + r^2) - (r^2 + 2rr + r^2)$

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

$x^2 = 4rr$

$x_1 = \sqrt{4rr}$

$x_1 = 2\sqrt{rr}$



11. $AC^2 = 40^2 + 30^2$

$AC^2 = 1600 + 900$

$AC^2 = 2500$

$AC = \sqrt{2500}$

$AC = 50$

$CD^2 = AC \cdot CE$

$20^2 = 50 \cdot CE$

$400 = 50CE$

$400/50 = CE$

$CE = 8$ alternativa (C)