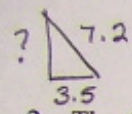
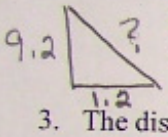
Ladder Questions – Pythagorean Theorem

1. A ladder is 7.2m long. The distance from the base of the ladder to the wall is 3.5 m. Calculate how far up the wall the ladder will reach.



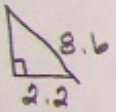
$a^2 = c^2 - b^2$
$a^2 = 7.2^2 - 3.5^2$
$a^2 = 51.84 - 12.25$
$a^2 = 39.59$
$a = 6.29$

2. The distance a ladder is from the base of the wall is 1.2 m. If the ladder will reaches 9.2 m up the wall, how long is the ladder?



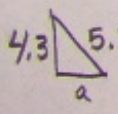
$c^2 = a^2 + b^2$
$c^2 = 9.2^2 + 1.2^2$
$c^2 = 84.64 + 1.44$
$c^2 = 86.08$
$c = 9.3$

3. The distance a ladder is from the base of the wall is 2.2 m. If the ladder is 8.6 m long, calculate how far up the wall the ladder will reach.



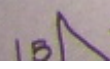
$a^2 = c^2 - b^2$
$a^2 = 8.6^2 - 2.2^2$
$a^2 = 73.96 - 4.84$
$a^2 = 69.12$
$a = 8.31$

4. A ladder is 5.3 m long. If the ladder reaches 4.3 m up the wall, what is the distance the ladder is from the base of the wall?

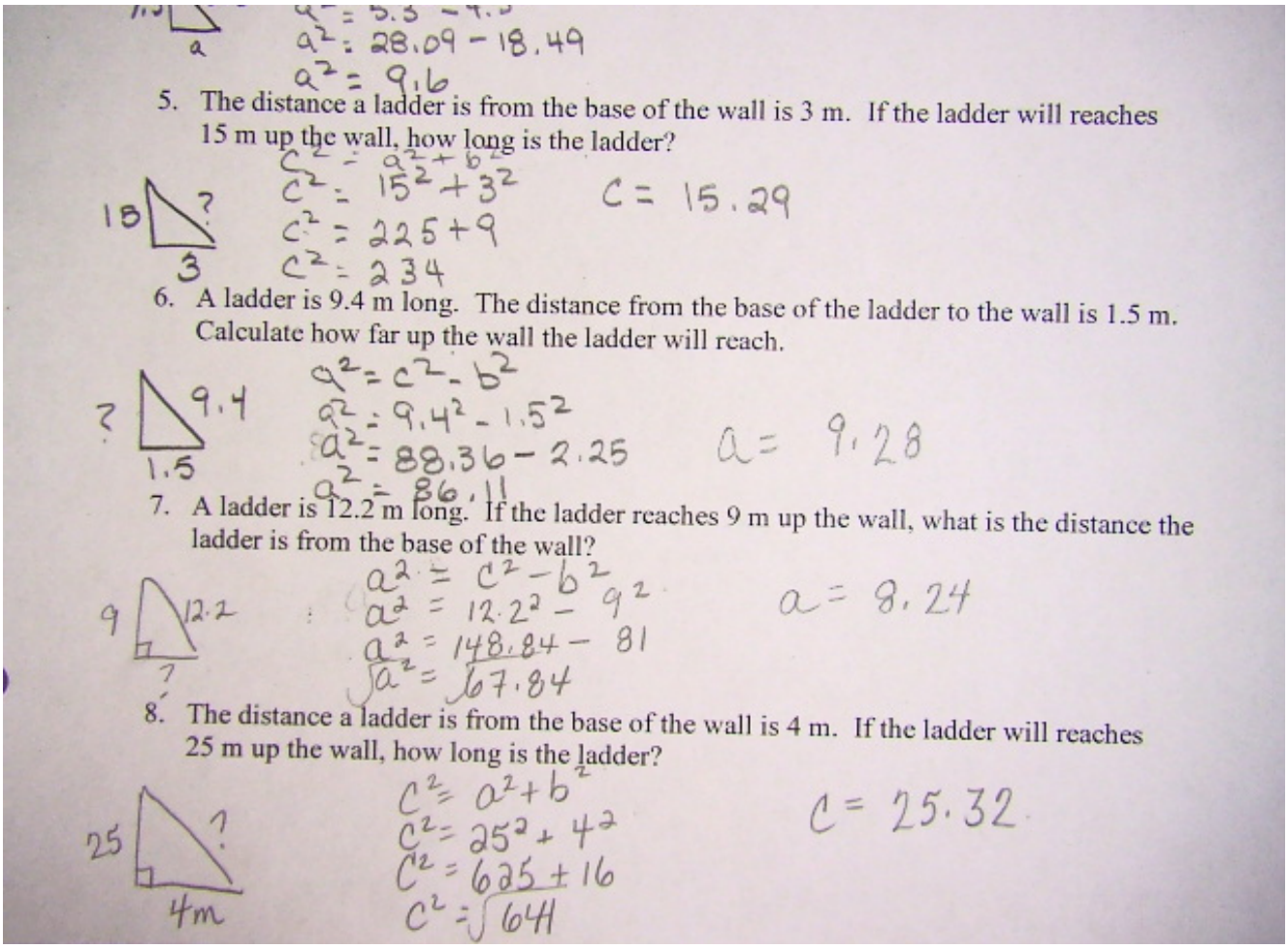


$a^2 = c^2 - b^2$
$a^2 = 5.3^2 - 4.3^2$
$a^2 = 28.09 - 18.49$
$a^2 = 9.6$
$a = 3.09$

5. The distance a ladder is from the base of the wall is 3 m. If the ladder will reaches 15 m up the wall, how long is the ladder?



$c^2 = a^2 + b^2$
$c^2 = 15^2 + 3^2$
$c = 15.29$



$a^2 = 28.09 - 18.49$

$a^2 = 9.6$

5. The distance a ladder is from the base of the wall is 3 m. If the ladder will reaches 15 m up the wall, how long is the ladder?

15, ?, 3

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

$c^2 = 15^2 + 3^2$ $\quad c = 15.29$

$c^2 = 225 + 9$

$c^2 = 234$

6. A ladder is 9.4 m long. The distance from the base of the ladder to the wall is 1.5 m. Calculate how far up the wall the ladder will reach.

?, 9.4, 1.5

$a^2 = c^2 - b^2$

$a^2 = 9.4^2 - 1.5^2$ $\quad a = 9.28$

$a^2 = 88.36 - 2.25$

$a^2 = 86.11$

7. A ladder is 12.2 m long. If the ladder reaches 9 m up the wall, what is the distance the ladder is from the base of the wall?

9, 12.2, ?

$a^2 = c^2 - b^2$

$a^2 = 12.2^2 - 9^2$ $\quad a = 8.24$

$a^2 = 148.84 - 81$

$\sqrt{a^2} = \sqrt{67.84}$

8. The distance a ladder is from the base of the wall is 4 m. If the ladder will reaches 25 m up the wall, how long is the ladder?

25, ?, 4m

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

$c^2 = 25^2 + 4^2$ $\quad c = 25.32$

$c^2 = 625 + 16$

$c^2 = \sqrt{641}$