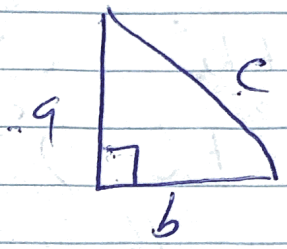
Pythagorean Theorem

1.) $a = 9 \quad b = 12$

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



$(9)^2 + (12)^2 = c^2$

$81 + 144 = c^2$

$\sqrt{225} = \sqrt{c^2}$

$15 = c$

2) $a = 7 \quad c = 25$

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

$(7)^2 + b^2 = (25)^2$

$49 + b^2 = 625$

$-49 \qquad -49$

$\sqrt{b^2} = \sqrt{576}$

$b = 24$

3) $b = 12 \quad c = 13$

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

$a^2 + (12)^2 = (13)^2$

$a^2 + 144 = 169$

$-144 \quad -144$

$\sqrt{a^2} = \sqrt{25}$

$a = 5$

4) $a = \frac{3}{5}$ $b = \frac{4}{5}$

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

$\left(\frac{3}{5}\right)^2 + \left(\frac{4}{5}\right)^2 = c^2$

$\frac{9}{25} + \frac{16}{25} = c^2$

$\frac{25}{25} = c^2$

$\sqrt{1} = \sqrt{c^2}$

$1 = c$

5) $b = 2$ $c = 2.5$

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

$a^2 + (2)^2 = (2.5)^2$

$a^2 + 4 = 6.25$

$-4 \quad -4$

$\sqrt{a^2} = \sqrt{2.25}$

$a = 1.5$

6) $a = 12$ $c = 37$

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

$(12)^2 + b^2 = (37)^2$

$144 + b^2 = 1369$

$-144 \quad -144$

$\sqrt{b^2} = \sqrt{1225}$

$b = 35$

7) $a=20 \quad b=21$

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

$(20)^2+(21)^2=c^2$

$400+441=c^2$

$\sqrt{841}=\sqrt{c^2}$

$29=c$

8) $a=3.2 \quad c=13$

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

$(3.2)^2+b^2=(13)^2$

$10.24+b^2=169$

$-10.24 \qquad -10.24$

$\sqrt{b^2}=\sqrt{158.76}$

$b=12.6$

9) $a=1.8 \quad c=8.2$

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

$(1.8)^2+b^2=(8.2)^2$

$3.24+b^2=67.24$

$-3.24 \qquad -3.24$

$\sqrt{b^2}=\sqrt{64.0}$

$b=8$

10) $b=20 \quad c=25$

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

$(20)^2+b^2=(25)^2$

$400+b^2=625$

$-400 \qquad -400$

$\sqrt{b^2}=\sqrt{225}$

$b=15$

11) $a=\frac{6}{5}, \quad b=\frac{8}{5}$

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

$\left(\frac{6}{5}\right)^2+\left(\frac{8}{5}\right)^2=c^2$

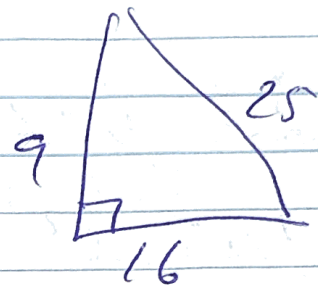
$\frac{36}{25}+\frac{64}{25}=c^2$

$\frac{100}{25}=c^2$

$\sqrt{4}=\sqrt{c^2}$

$2=c$

12) 9, 16, 25



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

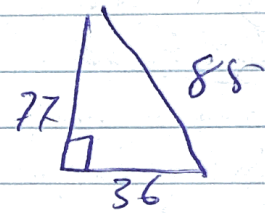
$(9)^2 + (16)^2 = (25)^2$

$81 + 256 = 625$

$337 = 625$

No

13) 36, 77, 85



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

$(36)^2 + (77)^2 = (85)^2$

$1296 + 5929 = 7225$

$7,225 = 7225$

yes

14) 40, 96, 104

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

$(40)^2 + (96)^2 = (104)^2$

$1600 + 9216 = 10,816$

$10,816 = 10,816$

yes

15) 16, 30, 34

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

$(16)^2 + (30)^2 = 34$

$256 + 900 = 1156$

$1156 = 1156$

yes