Extended Mathematics Formative 1

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1.

a)

$a = 4, b = 5$

$4^2 + 5^2 = c^2$
$16 + 25 = c^2$
$41 = c^2$
$\sqrt{41} = \sqrt{c^2}$
$c^2 = \sqrt{41}$

b)

$a = 5\sqrt{2} \quad c = 15$

$5\sqrt{2}^2 + b^2 = 15^2$
$50 + b^2 = 15$
$50 + b^2 = 225$
$-50 \quad -50$
$b^2 = 175$
$\sqrt{b^2} = \sqrt{175}$
$b = \sqrt{175}$
$b = \sqrt{25} \cdot \sqrt{7}$
$b = 5\sqrt{7}$

$(5\sqrt{2})^2$
$25\sqrt{4}$
$25(2)$
50

15^2
$15 \cdot 15$
75
$+150$
225

c)

$a = \sqrt{15} \quad b = \sqrt{17} \quad c = \sqrt{17}$

$(\sqrt{15})^2 + b^2 = (\sqrt{17})^2$
$\sqrt{225} + b^2 = \sqrt{289}$
$15 + b^2 = 17$
$-15 \quad -15$
$b^2 = 2$
$\sqrt{b^2} = \sqrt{2}$
$b = \sqrt{2}$

d)

$a = \sqrt{5} \quad c = 7$

$\sqrt{5}^2 + b^2 = 7^2$
$5 + b^2 = 49$
$-5 \quad -5$
$\sqrt{b^2} = \sqrt{44}$
$b = \sqrt{44}$
$b = \sqrt{4} \cdot \sqrt{11}$
$b = 2\sqrt{11}$

2.

7) 15, 17, 8

$8^2 + 15^2 = 17^2$

$64 + 225 = 289$

$289 = 289$

Right Triangle

8) 7, 24, 25

$7^2 + 24^2 = 25^2$

$49 + 576 = 625$

$625 = 625$

Right Triangle

9) 6, 7, 8

$6^2 + 7^2 = 8^2$

$36 + 49 = 64$

$85 = 64$

$\begin{array}{r} 49 \\ +36 \\ \hline 85 \end{array}$

Acute Triangle

10) 10, 8, 14

$8^2 + 10^2 = 14^2$

$64 + 100 = 196$

$164 = 196$

~~Obtuse~~ Obtuse Triangle

11) 9, 40, 41

$9^2 + 40^2 = 41^2$

$81 + 1600 = 1681$

$1681 = 1681$

Right Triangle

12) 6, 8, 10

$6^2 + 8^2 = 10^2$

$36 + 64 = 100$

$100 = 100$

Right Triangle