

T 1

$$2^2 + 2^2 = C^2$$

$$4 + 4 = C^2$$

$$\sqrt{8} = \sqrt{C^2}$$

$$\sqrt{8} = C \checkmark$$

$$2.83 = C \checkmark$$

T 2

$$\sqrt{8^2 + 2^2} = C^2$$

$$8 + 4 = C^2$$

$$\sqrt{12} = \sqrt{C^2}$$

$$\sqrt{12} = C \checkmark$$

$$3.46 = C \checkmark$$

T 3

$$\sqrt{12^2 + 2^2} = C^2$$

$$12 + 4 = C^2$$

$$\sqrt{16} = \sqrt{C^2}$$

$$\sqrt{16} = C \checkmark$$

$$4 = C \checkmark$$

T 4

$$4^2 + 2^2 = C^2$$

$$16 + 4 = C^2$$

$$\sqrt{20} = \sqrt{C^2}$$

$$\sqrt{20} = C \checkmark$$

$$4.47 = C \checkmark$$

T 5

$$\sqrt{20^2 + 2^2} = C^2$$

$$20 + 4 = C^2$$

$$\sqrt{24} = \sqrt{C^2}$$

$$\sqrt{24} = C \checkmark$$

$$4.90 = C \checkmark$$

T 6

$$\sqrt{24^2 + 2^2} = C^2$$

$$24 + 4 = C^2$$

$$\sqrt{28} = \sqrt{C^2}$$

$$\sqrt{28} = C \checkmark$$

$$5.29 = C \checkmark$$

T 7

$$\sqrt{28^2 + 2^2} = C^2$$

$$28 + 4 = C^2$$

$$\sqrt{32} = \sqrt{C^2} \checkmark$$

$$\sqrt{32} = C \checkmark$$

$$5.66 = C \checkmark$$

T 8

$$\sqrt{32^2 + 2^2} = C^2$$

$$32 + 4 = C^2$$

$$\sqrt{36} = \sqrt{C^2}$$

$$\sqrt{36} = C \checkmark$$

$$6 = C \checkmark$$

T 9

$$6^2 + 2^2 = C^2$$

$$36 + 4 = C^2$$

$$\sqrt{40} = \sqrt{C^2}$$

$$\sqrt{40} = C \checkmark$$

$$6.32 = C \checkmark$$

T 10

$$\sqrt{40^2 + 2^2} = C^2$$

$$40 + 4 = C^2$$

$$\sqrt{44} = \sqrt{C^2}$$

$$\sqrt{44} = C \checkmark$$

$$6.63 = C \checkmark$$

T 11

$$\sqrt{44^2 + 2^2} = C^2$$

$$44 + 4 = C^2$$

$$\sqrt{48} = \sqrt{C^2}$$

$$\sqrt{48} = C \checkmark$$

$$6.93 = C \checkmark$$

T 15

$$\sqrt{48^2 + 2^2} = C^2$$

$$48 + 4 = C^2$$

$$\sqrt{52} = \sqrt{C^2}$$

$$\sqrt{52} = C \checkmark$$

$$7.21 = C \checkmark$$

T 16

$$\sqrt{52^2 + 2^2} = C^2$$

$$52 + 4 = C^2$$

$$\sqrt{56} = \sqrt{C^2}$$

$$\sqrt{56} = C \checkmark$$

$$7.48 = C \checkmark$$

T 17

$$\sqrt{56^2 + 2^2} = C^2$$

$$56 + 4 = C^2$$

$$\sqrt{60} = \sqrt{C^2}$$

$$\sqrt{60} = C \checkmark$$

$$7.75 = C \checkmark$$

T 18

$$\sqrt{60^2 + 2^2} = C^2$$

$$60 + 4 = C^2$$

$$\sqrt{64} = \sqrt{C^2}$$

$$\sqrt{64} = C \checkmark$$

$$8 = C \checkmark$$

# Spiral Equations

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Kammryn L  
03/12/2019

T1  $2.5^2 + 2.5^2 = c^2$   
 $6.25 + 6.25 = c^2$   
 $12.5 = c^2$   
 $c^2 = \sqrt{12.5}$   $c = 3.54$

T6  $2.5^2 + 37.5^2 = c^2$   
 $6.25 + 37.5 = c^2$   
 $c^2 = \sqrt{43.75}$   
 $c = 6.61$

T2  $2.5^2 + \sqrt{12.5}^2 = c^2$   
 $6.25 + 12.5 = c^2$   
 $c^2 = 18.75$   
 $c^2 = \sqrt{18.75}$   $c = 4.33$

T7  $2.5^2 + \sqrt{43.75}^2 = c^2$   
 $6.25 + 43.75 = c^2$   
 $c^2 = \sqrt{50}$   
 $c = 7.07$

T3  $2.5^2 + \sqrt{18.75}^2 = c^2$   
 $6.25 + 18.75 = c^2$   
 $c^2 = 25$   
 $c^2 = \sqrt{25}$   
 $c = 5$

T8  $2.5^2 + \sqrt{50}^2 = c^2$   
 $6.25 + 50 = c^2$   
 $c^2 = \sqrt{56.25}$   
 $c = 7.5$

T4  $2.5^2 + \sqrt{25}^2 = c^2$   
 $6.25 + 25 = c^2$   
 $31.25 = c^2$   
 $c^2 = \sqrt{31.25}$   
 $c = 5.59$

T9  $2.5^2 + \sqrt{56.25}^2 = c^2$   
 $6.25 + 56.25 = c^2$   
 $c^2 = \sqrt{62.5}$   
 $c = 7.90$

T5  $2.5^2 + \sqrt{31.25}^2 = c^2$   
 $6.25 + 31.25 = c^2$   
 $c^2 = 37.5$   
 $c^2 = \sqrt{37.5}$   
 $c = 6.12$

T10  $2.5^2 + \sqrt{62.5}^2 = c^2$   
 $6.25 + 62.5 = c^2$   
 $c^2 = \sqrt{68.75}$   
 $c = 8.29$

T11  $2.5^2 + \sqrt{68.75}^2 = c^2$   
 $6.25 + 68.75 = c^2$   
 $c^2 = \sqrt{75}$   
 $c = 8.66$



$$\begin{aligned} \text{T12} \quad 2.5^2 + \sqrt{75}^2 &= c^2 \\ 6.25 + 75 &= c^2 \\ c^2 &= \sqrt{81.25} \\ c &= 9.01 \checkmark \end{aligned}$$

$$\begin{aligned} \text{T17} \quad 2.5^2 + \sqrt{106.25}^2 &= c^2 \\ 6.25 + 106.25 &= c^2 \\ c^2 &= \sqrt{112.5} \\ c &= 10.60 \checkmark \end{aligned}$$

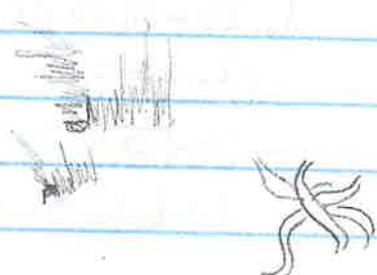
$$\begin{aligned} \text{T13} \quad 2.5^2 + \sqrt{81.25}^2 &= c^2 \\ 6.25 + 81.25 &= c^2 \\ c^2 &= \sqrt{87.5} \\ c &= 9.35 \checkmark \end{aligned}$$

$$\begin{aligned} \text{T18} \quad 2.5^2 + \sqrt{117.5}^2 &= c^2 \\ 6.25 + 117.5 &= c^2 \\ c^2 &= \sqrt{118.75} \\ c &= 10.89 \checkmark \end{aligned}$$

$$\begin{aligned} \text{T14} \quad 2.5^2 + \sqrt{87.5}^2 &= c^2 \\ 6.25 + 87.5 &= c^2 \\ c^2 &= \sqrt{93.75} \\ c &= 9.68 \checkmark \end{aligned}$$

$$\begin{aligned} \text{T15} \quad 2.5^2 + \sqrt{93.75}^2 &= c^2 \\ 6.25 + 93.75 &= c^2 \\ c^2 &= \sqrt{100} \\ c &= 10 \checkmark \end{aligned}$$

$$\begin{aligned} \text{T16} \quad 2.5^2 + \sqrt{100}^2 &= c^2 \\ 6.25 + 100 &= c^2 \\ c^2 &= \sqrt{106.25} \\ c &= 10.30 \checkmark \end{aligned}$$



Kendall G.

# Spiral of Theodorus calculations

perfect square list

- 1
- 4
- 9
- 16
- 25
- 36
- 49
- 64
- 81
- 100
- 121
- 144
- 169
- 196
- 225
- 256

T1

$$1.5^2 + 1.5^2 = c^2$$

$$2.25 + 2.25 = c^2$$

$$\sqrt{4.5} = \sqrt{c^2}$$

$$c = \sqrt{4.5} \quad c = 2.2$$

T6

$$\sqrt{13.5^2 + 1.5^2} = c^2$$

$$13.5 + 2.25 = c^2$$

$$\sqrt{15.75} = \sqrt{c^2}$$

$$c = \sqrt{15.75} \quad c = 3.98$$

T2

$$\sqrt{4.5^2 + 1.5^2} = c^2$$

$$4.5 + 2.25 = c^2$$

$$\sqrt{6.75} = \sqrt{c^2}$$

$$c = \sqrt{6.75} \quad c = 2.59$$

T7

$$\sqrt{15.75^2 + 1.5^2} = c^2$$

$$15.75 + 2.25 = c^2$$

$$\sqrt{18} = \sqrt{c^2}$$

$$c = \sqrt{18} \quad c = 4.24$$

T3

$$\sqrt{6.75^2 + 1.5^2}$$

$$6.75 + 2.25 = c^2$$

$$\sqrt{9} = \sqrt{c^2}$$

$$c = 3$$

$$* c = 3\sqrt{2}$$

T8

$$\sqrt{18^2 + 1.5^2} = c^2$$

$$18 + 2.25 = c^2$$

$$\sqrt{20.25} = \sqrt{c^2}$$

$$c = \sqrt{20.25} \quad c = 4.5$$

T4

$$\sqrt{9^2 + 1.5^2} = c^2$$

$$9 + 2.25 = c^2$$

$$\sqrt{11.25} = \sqrt{c^2}$$

$$c = \sqrt{11.25} \quad c = 3.35$$

T9

$$\sqrt{20.25^2 + 1.5^2} = c^2$$

$$20.25 + 2.25 = c^2$$

$$\sqrt{22.5} = \sqrt{c^2}$$

$$c = \sqrt{22.5} \quad c = 4.74$$

T5

$$\sqrt{11.25^2 + 1.5^2} = c^2$$

$$11.25 + 2.25 = c^2$$

$$\sqrt{13.5} = \sqrt{c^2}$$

$$c = \sqrt{13.5} \quad c = 3.67$$



T10 |  $\sqrt{22.5^2 + 1.5^2} = c^2$   
 $22.5 + 2.25 = c^2$   
 $\sqrt{24.75} = \sqrt{c^2}$   
 $c = \sqrt{24.75}$   $c = 4.9$

T15 |  $\sqrt{33.75^2 + 1.5^2} = c^2$   
 $33.75 + 2.25 = c^2$   
 $\sqrt{36} = \sqrt{c^2}$   
 $c = 6$

T11 |  $\sqrt{24.75^2 + 1.5^2} = c^2$   
 $24.75 + 2.25 = c^2$   
 $\sqrt{27} = \sqrt{c^2}$   
 $c = \sqrt{27}$   $c = 5.9$

T16 |  $6^2 + 1.5^2 = c^2$   
 $36 + 2.25 = c^2$   
 $\sqrt{38.25} = \sqrt{c^2}$   
 $c = \sqrt{38.25}$   
 $c = 6.8$

T12 |  $\sqrt{27^2 + 1.5^2} = c^2$   
 $27 + 2.25 = c^2$   
 $\sqrt{29.25} = \sqrt{c^2}$   
 $c = \sqrt{29.25}$   $c = 5.4$

T17 |  $\sqrt{38.25^2 + 1.5^2} = c^2$   
 $38.25 + 2.25 = c^2$   
 $\sqrt{40.5} = \sqrt{c^2}$   
 $c = \sqrt{40.5}$   $c = 6.36$

T13 |  $\sqrt{29.25^2 + 1.5^2} = c^2$   
 $29.25 + 2.25 = c^2$   
 $\sqrt{31.5} = \sqrt{c^2}$   
 $c = \sqrt{31.5}$   $c = 5.6$

T18 |  $\sqrt{40.5^2 + 1.5^2} = c^2$   
 $40.5 + 2.25 = c^2$   
 $\sqrt{42.75} = \sqrt{c^2}$   
 $c = \sqrt{42.75}$   $c = 6.53$

T14 |  $\sqrt{31.5^2 + 1.5^2} = c^2$   
 $31.5 + 2.25 = c^2$   
 $\sqrt{33.75} = \sqrt{c^2}$   
 $c = \sqrt{33.75}$   $c = 5.8$

# PT Spiral Calculations

Sarah

$$T1. 2.7^2 + 2.7^2 = C^2$$

$$7.29 + 7.29 = 14.58$$

$$X = \sqrt{14.58} \quad X = 3.8$$

$$T2. 2.7^2 + \sqrt{14.58}^2 = C^2$$

$$7.29 + 14.58 = 21.87 \quad 3/12/19$$

$$X = \sqrt{21.87} \quad X = 4.67$$

$$T3. 2.7^2 + \sqrt{21.87}^2 = C^2$$

$$7.29 + 21.87 = C^2$$

$$X = \sqrt{29.16} \quad X = 5.4$$

$$T4. 2.7^2 + \sqrt{29.16}^2 = C^2$$

$$7.29 + 29.16 = C^2$$

$$X = \sqrt{36.45} \quad X = 6.04$$

$$T5. 2.7^2 + \sqrt{36.45}^2 = C^2$$

$$7.29 + 36.45 = C^2$$

$$X = \sqrt{43.74} \quad X = 6.61$$

$$T6. 2.7^2 + \sqrt{43.74}^2 = C^2$$

$$7.29 + 43.74 = C^2$$

$$X = \sqrt{51.03} \quad X = 7.14$$

$$T7. 2.7^2 + \sqrt{51.03}^2 = C^2$$

$$7.29 + 51.03 = C^2$$

$$X = \sqrt{58.32} \quad X = 7.64$$

$$T8. 2.7^2 + \sqrt{58.32}^2 = C^2$$

$$7.29 + 58.32 = C^2$$

$$X = \sqrt{65.61} \quad X = 8.1$$

$$T9. 2.7^2 + \sqrt{65.61}^2 = C^2$$

$$7.29 + 65.61 = C^2$$

$$X = \sqrt{72.9} \quad X = 8.54$$

$$T10. 2.7^2 + \sqrt{72.9}^2 = C^2$$

$$7.29 + 72.9 = C^2$$

$$X = \sqrt{80.19} \quad X = 8.95$$

$$T11. 2.7^2 + \sqrt{80.19}^2 = C^2$$

$$7.29 + 80.19 = C^2$$

$$X = \sqrt{87.48} \quad X = 9.35$$

$$T12. 2.7^2 + \sqrt{87.48}^2 = C^2$$

$$7.29 + 87.48 = C^2$$

$$X = \sqrt{94.77} \quad X = 9.73$$

$$T13. 2.7^2 + \sqrt{94.77}^2 = C^2$$

$$7.29 + 94.77 = C^2$$

$$X = \sqrt{102.06} \quad X = 10.10$$

$$T14. 2.7^2 + \sqrt{102.06}^2 = C^2$$

$$7.29 + 102.06 = C^2$$

$$X = \sqrt{109.35} \quad X = 10.46$$

$$T15. 2.7^2 + \sqrt{109.35}^2 = C^2$$

$$7.29 + 109.35 = C^2$$

$$X = \sqrt{116.64} \quad X = 10.8$$

$$T16. 2.7^2 + \sqrt{116.64}^2 = C^2$$

$$7.29 + 116.64 = C^2$$

$$X = \sqrt{123.93} \quad X = 11.13$$

$$T17. 2.7^2 + \sqrt{123.93}^2 = C^2$$

$$7.29 + 123.93$$

$$X = \sqrt{131.22} \quad X = 11.50$$