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$$1. S = \frac{8\sqrt{2}}{18} = \boxed{\frac{4\sqrt{2}}{9}} \quad \text{Csc} = \frac{9 \cdot \sqrt{2}}{4\sqrt{2} \cdot \sqrt{2}} = \boxed{\frac{9\sqrt{2}}{8}}$$

$$C = \frac{14}{18} = \boxed{\frac{7}{9}} \quad \text{Sec} = \boxed{\frac{9}{7}}$$

$$T = \frac{8\sqrt{2}}{14} = \boxed{\frac{4\sqrt{2}}{7}} \quad \text{Cot} = \frac{7 \cdot \sqrt{2}}{4\sqrt{2} \cdot \sqrt{2}} = \boxed{\frac{7\sqrt{2}}{8}}$$

$$2. S = \frac{2\sqrt{14}}{15} \quad \text{Csc} = \frac{15 \cdot \sqrt{14}}{2\sqrt{14} \cdot \sqrt{14}} = \boxed{\frac{15\sqrt{14}}{28}}$$

$$C = \frac{13}{15} \quad \text{Sec} = \boxed{\frac{15}{13}}$$

$$T = \frac{2\sqrt{14}}{13} \quad \text{Cot} = \frac{13 \cdot \sqrt{14}}{2\sqrt{14} \cdot \sqrt{14}} = \boxed{\frac{13\sqrt{14}}{28}}$$

$$3. S = \frac{9 \cdot \sqrt{97}}{\sqrt{97} \cdot \sqrt{97}} = \boxed{\frac{9\sqrt{97}}{97}} \quad \text{Csc} = \boxed{\frac{\sqrt{97}}{9}}$$

$$C = \frac{4 \cdot \sqrt{97}}{\sqrt{97} \cdot \sqrt{97}} = \boxed{\frac{4\sqrt{97}}{97}} \quad \text{Sec} = \boxed{\frac{\sqrt{97}}{4}}$$

$$T = \boxed{\frac{9}{4}} \quad \text{Cot} = \boxed{\frac{4}{9}}$$

$$4. S = \frac{12}{37} \quad \text{Csc} = \boxed{\frac{37}{12}}$$

$$C = \frac{35}{37} \quad \text{Sec} = \boxed{\frac{37}{35}}$$

$$T = \frac{12}{35} \quad \text{Cot} = \boxed{\frac{35}{12}}$$

$$5. S = \frac{\sqrt{165}}{29} \quad \text{Csc} = \frac{29 \cdot \sqrt{165}}{\sqrt{165} \cdot \sqrt{165}} = \frac{29\sqrt{165}}{165}$$

$$C = \frac{26}{29} \quad \text{Sec} = \frac{29}{26}$$

$$T = \frac{\sqrt{165}}{26} \quad \text{Cot} = \frac{26 \cdot \sqrt{165}}{\sqrt{165} \cdot \sqrt{165}} = \frac{26\sqrt{165}}{165}$$

$$6. S = \frac{30}{35} = \frac{6}{7}$$

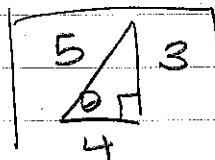
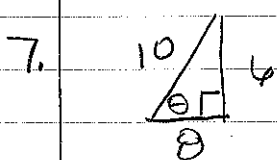
$$\text{Csc} = \frac{7}{6}$$

$$C = \frac{5\sqrt{3}}{35} = \frac{\sqrt{3}}{7}$$

$$\text{Sec} = \frac{7 \cdot \sqrt{3}}{\sqrt{3} \cdot \sqrt{3}} = \frac{7\sqrt{3}}{3}$$

$$T = \frac{30}{5\sqrt{3}} = \frac{6 \cdot \sqrt{3}}{\sqrt{3} \cdot \sqrt{3}} = \frac{6\sqrt{3}}{3}$$

$$\text{Cot} = \frac{\sqrt{3}}{6}$$



$$S = \frac{3}{5}$$

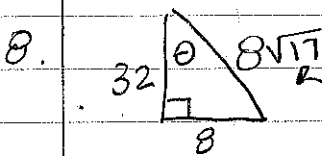
$$\text{Csc} = \frac{5}{3}$$

$$C = \frac{4}{5}$$

$$\text{Sec} = \frac{5}{4}$$

$$T = \frac{3}{4}$$

$$\text{Cot} = \frac{4}{3}$$

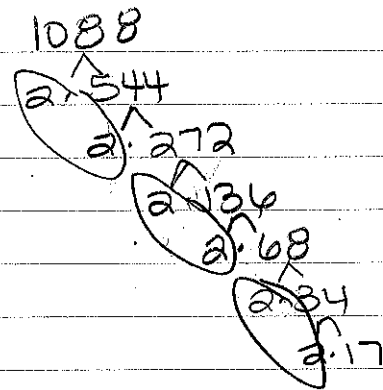


$$32^2 + 8^2 = c^2$$

$$1024 + 64 = c^2$$

$$1088 = c^2$$

$$8\sqrt{17} = c$$



$$S = \frac{8}{8\sqrt{17}} = \frac{1 \cdot \sqrt{17}}{\sqrt{17} \cdot \sqrt{17}} = \frac{\sqrt{17}}{17}$$

$$\text{Csc} = \frac{17}{\sqrt{17}}$$

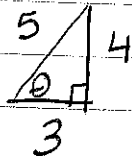
$$C = \frac{32}{8\sqrt{17}} = \frac{4\sqrt{17}}{\sqrt{17} \cdot \sqrt{17}} = \frac{4\sqrt{17}}{17}$$

$$\text{Sec} = \frac{17}{4}$$

$$T = \frac{8}{32} = \frac{1}{4}$$

$$\text{Cot} = 4$$

9.



$$S = \frac{4}{5}$$

$$\text{csc} = \frac{5}{4}$$

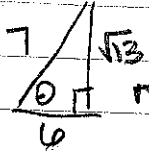
$$C = \frac{3}{5}$$

$$\text{sec} = \frac{5}{3}$$

$$T = \frac{4}{3}$$

$$\text{cot} = \frac{3}{4}$$

10.



$$b^2 + b^2 = 7^2$$

$$3b^2 = 49$$

$$b^2 = 13$$

$$b = \sqrt{13}$$

$$S = \frac{\sqrt{13}}{7}$$

$$\text{csc} = \frac{7 \cdot \sqrt{13}}{\sqrt{13} \cdot \sqrt{13}} = \frac{7\sqrt{13}}{13}$$

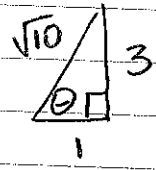
$$C = \frac{6}{7}$$

$$\text{sec} = \frac{7}{6}$$

$$T = \frac{\sqrt{13}}{6}$$

$$\text{cot} = \frac{6 \cdot \sqrt{13}}{\sqrt{13} \cdot \sqrt{13}} = \frac{6\sqrt{13}}{13}$$

11.



$$1^2 + 3^2 = c^2$$

$$1 + 9 = c^2$$

$$10 = c^2$$

$$\sqrt{10} = c$$

$$S = \frac{3 \cdot \sqrt{10}}{\sqrt{10} \cdot \sqrt{10}} = \frac{3\sqrt{10}}{10}$$

$$\text{csc} = \frac{\sqrt{10}}{3}$$

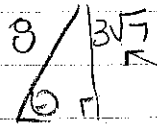
$$C = \frac{1 \cdot \sqrt{10}}{\sqrt{10} \cdot \sqrt{10}} = \frac{\sqrt{10}}{10}$$

$$\text{sec} = \frac{\sqrt{10}}{1}$$

$$T = 3$$

$$\text{cot} = \frac{1}{3}$$

12.



$$\sec \theta = \frac{h}{a}$$

$$2^2 + b^2 = 8^2$$

$$63 \uparrow$$

$$3 \cdot 3 \cdot 7$$

$$1 + b^2 = 64$$

$$b^2 = 63$$

$$b = 3\sqrt{7}$$

$$S = \frac{3\sqrt{7}}{8}$$

$$\csc = \frac{8\sqrt{7}}{3\sqrt{7} \cdot \sqrt{7}} = \frac{8\sqrt{7}}{21}$$

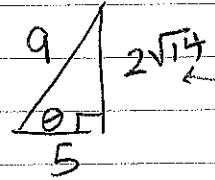
$$C = \frac{1}{8}$$

$$\sec = 8$$

$$T = 3\sqrt{7}$$

$$\cot = \frac{1 \cdot \sqrt{7}}{3\sqrt{7} \cdot \sqrt{7}} = \frac{\sqrt{7}}{21}$$

13.



$$5^2 + b^2 = 9^2$$

$$56 \uparrow$$

$$25 + b^2 = 81$$

$$8 \cdot 7$$

$$b^2 = 56$$

$$2 \cdot 2 \cdot 2$$

$$b = 2\sqrt{14}$$

$$S = \frac{2\sqrt{14}}{9}$$

$$\csc = \frac{9\sqrt{14}}{2\sqrt{14} \cdot \sqrt{14}} = \frac{9\sqrt{14}}{28}$$

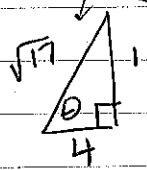
$$C = \frac{5}{9}$$

$$\sec = \frac{9}{5}$$

$$T = \frac{2\sqrt{14}}{5}$$

$$\cot = \frac{5 \cdot \sqrt{14}}{2\sqrt{14} \cdot \sqrt{14}} = \frac{5\sqrt{14}}{28}$$

14.



$$1^2 + 4^2 = c^2$$

$$1 + 16 = c^2$$

$$17 = c^2$$

$$\sqrt{17} = c$$

$$S = \frac{1 \cdot \sqrt{17}}{\sqrt{17} \cdot \sqrt{17}} = \frac{\sqrt{17}}{17}$$

$$\csc = \sqrt{17}$$

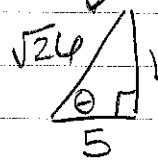
$$C = \frac{4 \cdot \sqrt{17}}{\sqrt{17} \cdot \sqrt{17}} = \frac{4\sqrt{17}}{17}$$

$$\sec = \frac{\sqrt{17}}{4}$$

$$T = \frac{1}{4}$$

$$\cot = 4$$

15



$$\cot = \frac{5}{10} a$$

$$1^2 + 5^2 = c^2$$

$$1 + 25 = c^2$$

$$26 = c^2$$

$$\sqrt{26} = c$$

$$S = \frac{1}{\sqrt{26}} = \frac{\sqrt{26}}{26}$$

$$\text{CSC} = \sqrt{26}$$

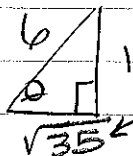
$$C = \frac{5}{\sqrt{26}} = \frac{5\sqrt{26}}{26}$$

$$\text{Sec} = \frac{\sqrt{26}}{5}$$

$$T = \frac{1}{5}$$

$$\cot = 5$$

16.



$$\text{CSC } \theta = \frac{6}{h}$$

$$1^2 + b^2 = 6^2$$

$$1 + b^2 = 36$$

$$b^2 = 35$$

$$b = \sqrt{35}$$

$$S = \frac{1}{6}$$

$$\text{CSC} = 6$$

$$C = \frac{\sqrt{35}}{6}$$

$$\text{Sec} = \frac{6}{\sqrt{35}} = \frac{6\sqrt{35}}{35}$$

$$T = \frac{1}{\sqrt{35}} = \frac{\sqrt{35}}{35}$$

$$\cot = \sqrt{35}$$

17.

$$\frac{9}{2} \sqrt{77} \cdot \sec = \frac{9}{2} h$$

$$2^2 + b^2 = 9^2$$

$$4 + b^2 = 81$$

$$b^2 = 77$$

$$b = \sqrt{77}$$

$$S = \frac{\sqrt{77}}{9}$$

$$\csc = \frac{9}{\sqrt{77}} = \frac{9\sqrt{77}}{77}$$

$$C = \frac{2}{9}$$

$$\sec = \frac{9}{2}$$

$$T = \frac{\sqrt{77}}{2}$$

$$\cot = \frac{2}{\sqrt{77}} = \frac{2\sqrt{77}}{77}$$

18.

$$\frac{13}{8} \sqrt{105}$$

$$8^2 + b^2 = 13^2$$

$$64 + b^2 = 169$$

$$b^2 = 105$$

$$b = \sqrt{105}$$

$$S = \frac{8}{13}$$

$$\csc = \frac{13}{8}$$

$$C = \frac{\sqrt{105}}{13}$$

$$\sec = \frac{13}{\sqrt{105}} = \frac{13\sqrt{105}}{105}$$

$$T = \frac{8}{\sqrt{105}} = \frac{8\sqrt{105}}{105}$$

$$\cot = \frac{\sqrt{105}}{8}$$