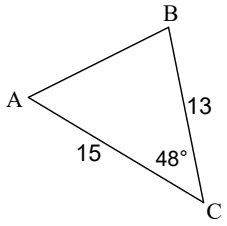
Law of Cosines Problem Set 3 Name _____

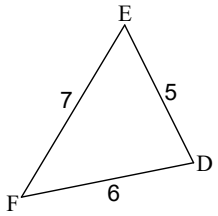
per _____ date _____

Solve for the unknown in each triangle. Round to the nearest tenth.

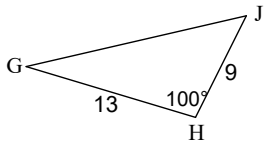
1. Find *AB*



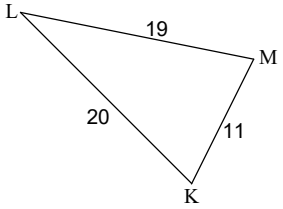
2. Find *m∠D*



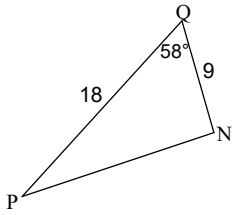
3. Find *GJ*



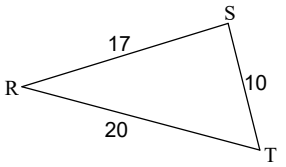
4. Find *m∠L*



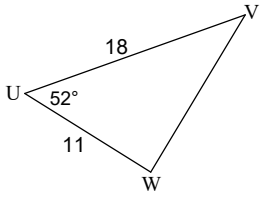
5. Find *NP*



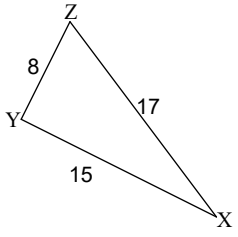
6. Find *m∠S*



7. Find *VW*



8. Find *m∠Y*

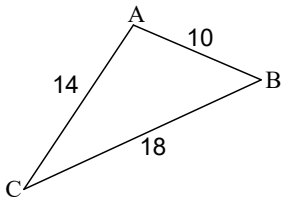


Law of Cosines Problem Set 3 Name _____

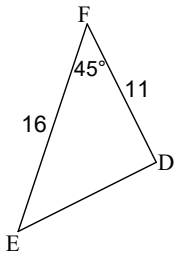
per _____ date _____

Solve for the unknown in each triangle. Round to the nearest tenth.

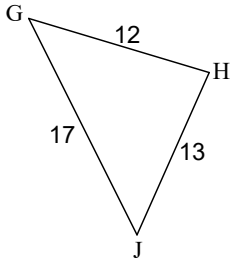
9. Find $m\angle B$



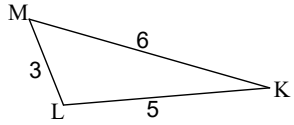
10. Find ED



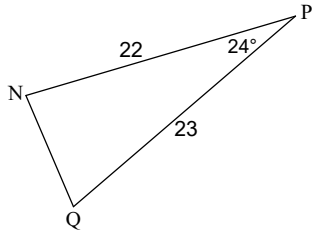
11. Find $m\angle J$



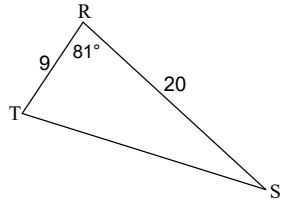
12. Find $m\angle L$



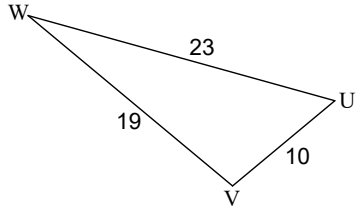
13. Find NQ



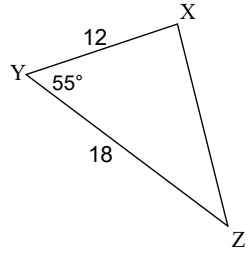
14. Find TS



15. Find $m\angle V$



16. Find XZ



Law of Cosines Problem Set 3 Name _____

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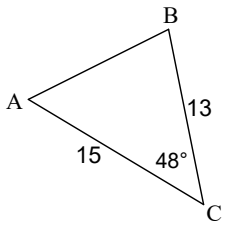
Solve for the unknown in each triangle. Round to the nearest tenth.

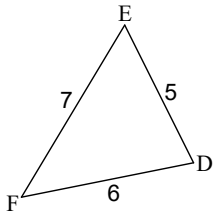
1. Find AB



$AB^2 = 15^2 + 13^2 - 2*15*13*\cos 48°$

$AB^2 \approx 133 \rightarrow AB \approx 11.5$

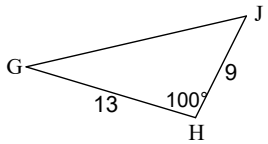
2. Find $m\angle D$



$\cos D = \dfrac{5^2 + 6^2 - 7^2}{2*5*6} = \dfrac{12}{60} = 0.2$

$m\angle D = \cos^{-1}(0.2) \approx 78.5°$

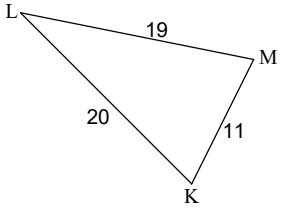
3. Find GJ



$GJ^2 = 13^2 + 9^2 - 2*13*9*\cos 100°$

$GJ^2 \approx 290.6 \rightarrow GJ \approx 17.0$

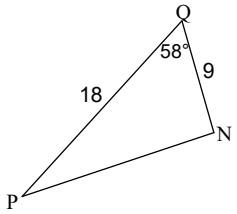
4. Find $m\angle L$



$\cos L = \dfrac{19^2 + 20^2 - 11^2}{2*19*20} \approx 0.8421$

$m\angle L \approx \cos^{-1}(0.8421) \approx 32.6°$

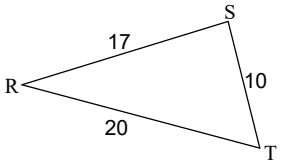
5. Find NP



$NP^2 = 18^2 + 9^2 - 2*18*9*\cos 58°$

$NP^2 \approx 233.3 \leftrightarrow NP \approx 15.3$

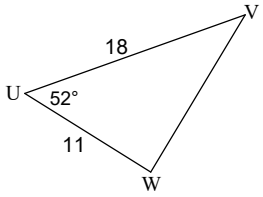
6. Find $m\angle S$



$\cos S = \dfrac{17^2 + 10^2 - 20^2}{2*17*10} = \dfrac{-11}{340} \approx -0.0324$

$m\angle S = \cos^{-1}(-0.0324) \approx 91.9°$

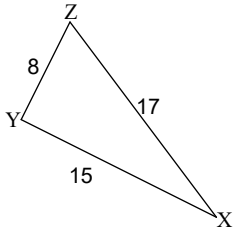
7. Find VW



$VW^2 = 11^2 + 18^2 - 2*11*18*\cos 52°$

$VW^2 \approx 201.2 \rightarrow VW \approx 14.2$

8. Find $m\angle Y$



$\cos Y = \dfrac{8^2 + 15^2 - 17^2}{2*8*15} = 0$

$m\angle Y = \cos^{-1}(0) = 90°$

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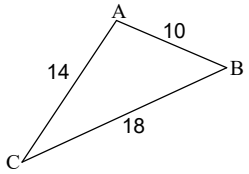
Solve for the unknown in each triangle. Round to the nearest tenth.

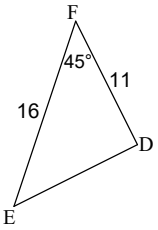
9. Find $m\angle B$



$$\cos B = \frac{10^2 + 18^2 - 14^2}{2*10*18} = \frac{228}{360} = 0.6\overline{3}$$

$$m\angle B = \cos^{-1}(0.6\overline{3}) \approx 50.7°$$

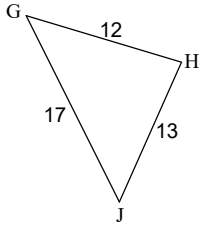
10. Find ED



$$ED^2 = 16^2 + 11^2 - 2*16*11*\cos 45°$$

$$ED^2 \approx 128.1 \rightarrow ED \approx 11.3$$

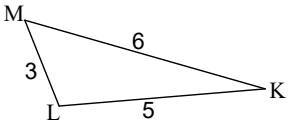
11. Find $m\angle J$



$$\cos J = \frac{17^2 + 13^2 - 12^2}{2*17*13} = \frac{314}{442} \approx 0.7104$$

$$m\angle J \approx \cos^{-1}(0.7104) \approx 44.7°$$

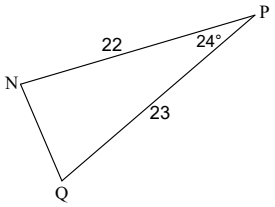
12. Find $m\angle L$



$$\cos L = \frac{3^2 + 5^2 - 6^2}{2*3*5} = \frac{-2}{30} = -0.0\overline{6}$$

$$m\angle L = \cos^{-1}(-0.0\overline{6}) \approx 93.8°$$

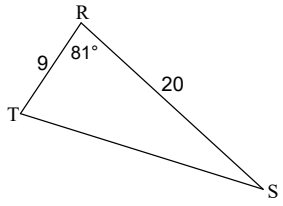
13. Find NQ



$$NQ^2 = 22^2 + 23^2 - 2*22*23*\cos 24°$$

$$NQ^2 \approx 88.5 \rightarrow NQ \approx 9.4$$

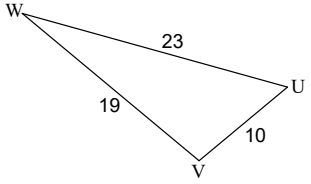
14. Find TS



$$TS^2 = 9^2 + 20^2 - 2*9*20*\cos 81°$$

$$TS^2 \approx 424.7 \rightarrow TS \approx 20.6$$

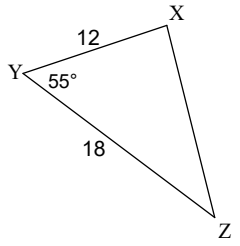
15. Find $m\angle V$



$$\cos V = \frac{19^2 + 10^2 - 23^2}{2*19*10} = \frac{-68}{380} \approx -0.1789$$

$$m\angle V \approx \cos^{-1}(-0.1789) \approx 100.3°$$

16. Find XZ



$$XZ^2 = 12^2 + 18^2 - 2*12*18*\cos 55°$$

$$XZ^2 \approx 220.2 \rightarrow XZ \approx 14.8$$