

Geometry- Study Guide - Exam 1

Solve each equation.

1) $-34 + 8n = -3(2 - 3n) + 3n$

2) $13 + x = 7(7 - 5x)$

3) $-6 + 8(8 - 2r) = 4r + 38$

4) $-23 - 8n = -5(3n - 1)$

Simplify.

5) $5\sqrt{32}$

6) $5\sqrt{27}$

7) $7\sqrt{80}$

8) $4\sqrt{108}$

9) $2\sqrt{2} + 2\sqrt{5} - \sqrt{8}$

10) $-3\sqrt{12} - 3\sqrt{3} - \sqrt{27}$

11) $3\sqrt{2} - 3\sqrt{18} - 2\sqrt{2}$

12) $-\sqrt{12} - \sqrt{27} - 2\sqrt{3}$

13) $-4\sqrt{5}(2 + 3\sqrt{5})$

14) $\sqrt{6}(4\sqrt{2} + \sqrt{10})$

15) $-3\sqrt{15}(\sqrt{6} + 4\sqrt{5})$

16) $4\sqrt{5}(4 + \sqrt{10})$

17) $\frac{\sqrt{8}}{\sqrt{6}}$

18) $-\frac{7}{\sqrt{6}}$

19) $\frac{\sqrt{5}}{\sqrt{6}}$

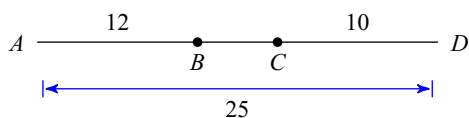
20) $\frac{\sqrt{3}}{\sqrt{5}}$

Use a ruler to measure the length of each line segment. Measure each segment in millimeters. Round your measurements to the nearest millimeter. Also state the maximum error and maximum percent of error in each measurement.

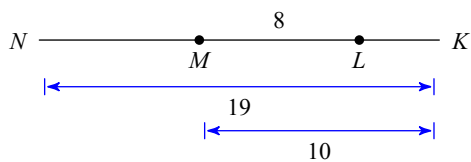


Find the length indicated.

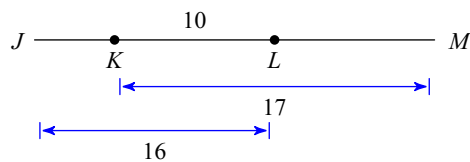
25) Find BC



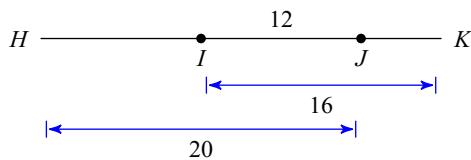
26) Find NL



27) Find JM



28) Find HK



Points A, B, C, and D are collinear and positioned in that order. Find the length indicated.

29) Find BC if $BC = 11x + 683$, $BD = 77$,
 $AD = 3x + 305$, and $AC = 3x + 229$.

30) $CD = x + 151$, $AD = 5x + 545$,
 $BC = 9x + 581$, and $AB = 88$. Find CD .

Draw an angle with the given measurement.

31) 120°

32) 79°



33) 44°

34) 51°



Draw and label an angle to fit each description.

35) an acute angle, $\angle KLM$

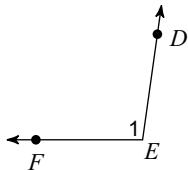
36) an acute angle, $\angle IHG$

37) an acute angle, $\angle GFE$

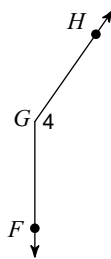
38) a right angle, $\angle SRQ$

Name each angle in four ways.

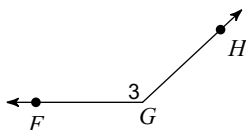
39)



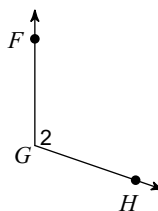
40)



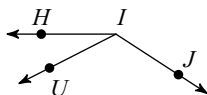
41)



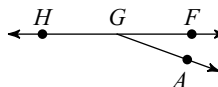
42)



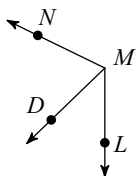
43) $m\angle UIH = 2x + 3$, $m\angle JIU = 9x + 12$,
and $m\angle JIH = 147^\circ$. Find x .



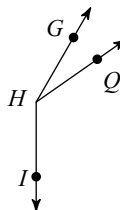
44) Find x if $m\angle AGH = 12x + 16$,
 $m\angle FGH = 15x$, and $m\angle FGA = 20^\circ$.



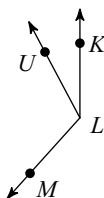
45) Find x if $m\angle LMN = 116^\circ$,
 $m\angle DMN = 8x + 6$, and $m\angle LMD = 5x + 6$.



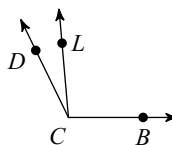
46) Find x if $m\angle QHI = 125^\circ$,
 $m\angle GHI = 21x + 3$, and $m\angle GHQ = 3x + 4$.



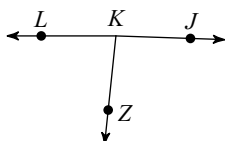
47) $m\angle MLK = 138x$, $m\angle MLU = 111x - 1$,
and $m\angle ULK = 28^\circ$. Find $m\angle MLK$.



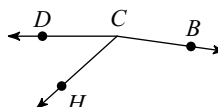
48) $m\angle DCL = x + 30$, $m\angle DCB = 116^\circ$,
and $m\angle LCB = x + 104$. Find $m\angle LCB$.



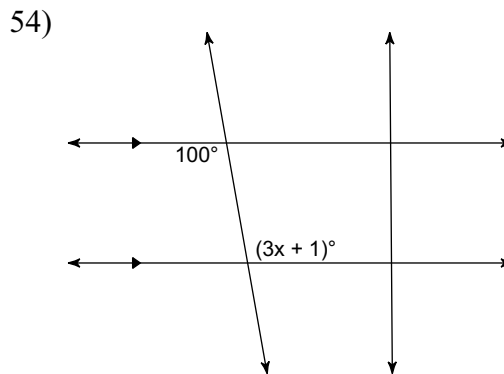
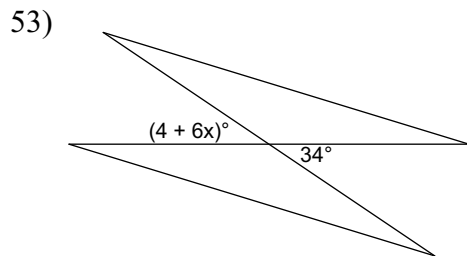
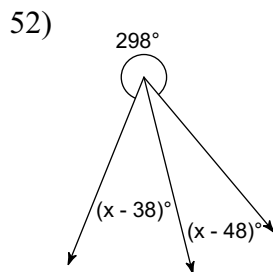
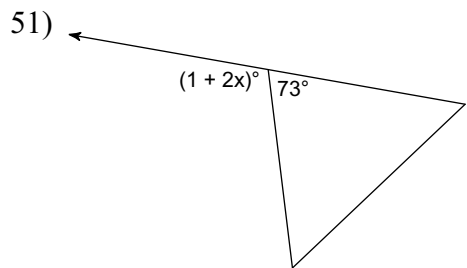
49) Find $m\angle JKL$ if $m\angle JKL = 178x$,
 $m\angle JKZ = 93x + 1$, and $m\angle ZKL = 84^\circ$.



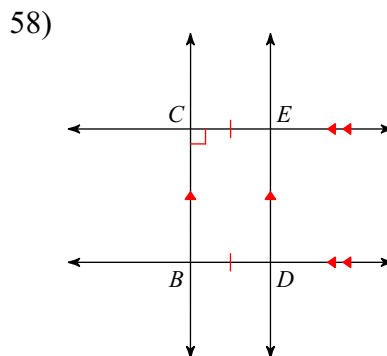
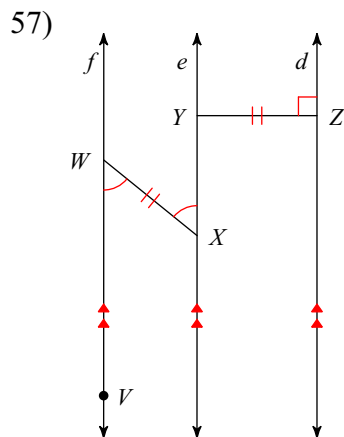
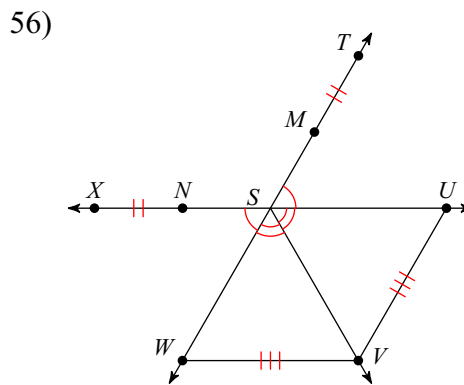
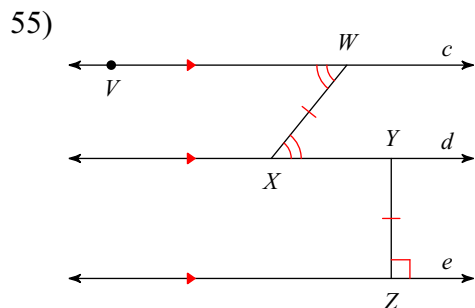
50) Find $m\angle BCD$ if $m\angle HCD = 13x + 3$,
 $m\angle BCD = 57x + 1$, and $m\angle BCH = 130^\circ$.



Find the value of x .

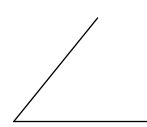
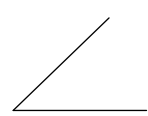
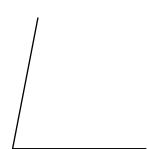
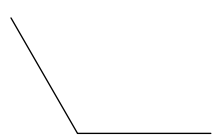


List all information given by the marks on the diagram.



Answers to Geometry- Study Guide - Exam 1

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|---------------------------|------------------------------|--------------------------------|-------------------------------|
| 1) $\{-7\}$ | 2) $\{1\}$ | 3) $\{1\}$ | 4) $\{4\}$ |
| 5) $20\sqrt{2}$ | 6) $15\sqrt{3}$ | 7) $28\sqrt{5}$ | 8) $24\sqrt{3}$ |
| 9) $2\sqrt{5}$ | 10) $-12\sqrt{3}$ | 11) $-8\sqrt{2}$ | 12) $-7\sqrt{3}$ |
| 13) $-8\sqrt{5} - 60$ | 14) $8\sqrt{3} + 2\sqrt{15}$ | 15) $-9\sqrt{10} - 60\sqrt{3}$ | 16) $16\sqrt{5} + 20\sqrt{2}$ |
| 17) $\frac{2\sqrt{3}}{3}$ | 18) $-\frac{7\sqrt{6}}{6}$ | 19) $\frac{\sqrt{30}}{6}$ | 20) $\frac{\sqrt{15}}{5}$ |
| 21) 58 mm, 0.5 mm, 0.9% | 22) 49 mm, 0.5 mm, 1% | 23) 19 mm, 0.5 mm, 2.6% | |
| 24) 37 mm, 0.5 mm, 1.4% | 25) 3 | 26) 17 | |
| 27) 23 | 28) 24 | 29) 1 | 30) 96 |
| 31) | 32) | 33) | 34) |



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|-----|-----|-----|-----|
| 35) | 36) | 37) | 38) |
| | | | |

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|--|--|--|-----------------------------------|
| 39) $\angle E, \angle 1, \angle FED, \angle DEF$ | 40) $\angle G, \angle 4, \angle HGF, \angle FGH$ | 41) $\angle G, \angle 3, \angle FGH, \angle HGF$ | |
| 42) $\angle G, \angle 2, \angle FGH, \angle HGF$ | 43) 12 | 44) 12 | |
| 45) 8 | 46) 7 | 47) 138° | 48) 95° |
| 49) 178° | 50) 172° | 51) 53 | 52) 74 |
| 53) 5 | 54) 33 | 55) $c \parallel e \parallel d$ | 56) $\angle XSW \cong \angle TSU$ |

- | | |
|-------------------------------------|-------------------------------------|
| $\overline{ZY} \perp e$ | $\angle USV \cong \angle VSW$ |
| $\overline{XW} \cong \overline{ZY}$ | $\overline{TM} \cong \overline{XN}$ |
| $\angle VWX \cong \angle YXW$ | $\overline{UV} \cong \overline{VW}$ |

- | | |
|-------------------------------------|---|
| 57) $e \parallel d \parallel f$ | 58) $\overline{BC} \parallel \overline{DE}$ |
| $d \perp \overline{ZY}$ | $\overline{EC} \parallel \overline{DB}$ |
| $\overline{XW} \cong \overline{ZY}$ | $\overline{CE} \perp \overline{BC}$ |
| $\angle YXW \cong \angle VWX$ | $\overline{EC} \cong \overline{DB}$ |