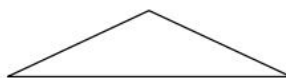


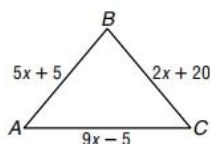
Midterm Mock Exam #2

1. Use a protractor and ruler to classify the triangle by its angles and sides.



1. _____

2. Find x , AB , BC , AC if $\triangle ABC$ is isosceles.



2. _____

3. Find the measure of the sides of the triangle if the vertices of $\triangle EFG$ are $E(1, 4)$, $F(5, 1)$, and $G(2, -3)$. Then classify the triangle by its sides.

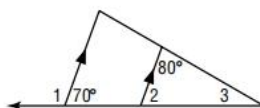
3. _____

Find the measure of each angle.

4. $m\angle 1$

5. $m\angle 2$

6. $m\angle 3$

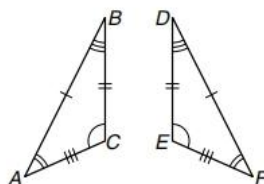


4. _____

5. _____

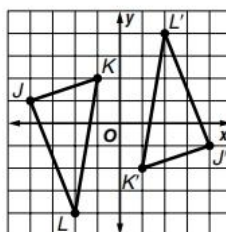
6. _____

7. Identify the congruent triangles and name their corresponding congruent angles.



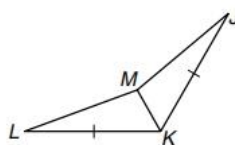
7. _____

8. Verify that $\triangle JKL \cong \triangle J'K'L'$ preserves congruence, assuming that corresponding angles are congruent.



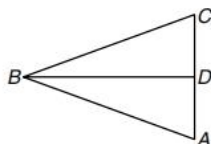
8. _____

9. In quadrilateral $JKLM$, $\overline{JK} \cong \overline{LK}$ and \overline{MK} bisects $\angle LKJ$. Name the postulate that could be used to prove $\triangle MKL \cong \triangle MKJ$. Choose from SSS, SAS, ASA, and AAS.



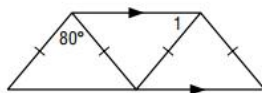
9. _____

10. $\triangle ABC$ is an isosceles triangle with $\overline{BD} \perp \overline{AC}$. Name the theorem that could be used to determine $\angle A \cong \angle C$. Then name the postulate that could be used to prove $\triangle BDA \cong \triangle BDC$. Choose from SSS, SAS, ASA, and AAS.



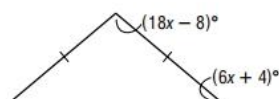
10. _____

11. Use the figure to find $m\angle 1$.



11. _____

12. Find x .

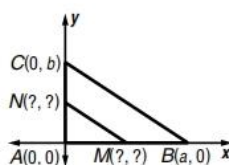


12. _____

13. Position and label equilateral $\triangle KLM$ with side lengths $3a$ units long on the coordinate plane.

13. _____

14. \overline{MN} joins the midpoint of \overline{AB} and the midpoint of \overline{AC} in $\triangle ABC$. Find the coordinates of M and N , and the slopes of \overline{MN} and \overline{BC} .



14. _____

1. Find the value of $4 + 6^2 \div 9 - 3$. 1. _____
2. Evaluate $\frac{5a - b^2}{3c}$ if $a = 4$, $b = 3$, and $c = 2$. 2. _____

For Questions 3 and 4, evaluate each expression if $a = 3.5$ and $b = -10$.

3. $-|b + 2a|$ 3. _____
4. $|-3 - a| - \left|\frac{b}{2}\right|$ 4. _____
5. Use $I = prt$, the formula for simple interest over t years, to find I when $p = \$2000$, $r = 6\%$, and $t = 18$ months. 5. _____

Name the sets of numbers to which each number belongs.

6. $\sqrt{16}$ 6. _____
7. -2.5 7. _____
8. $\frac{7}{9}$ 8. _____

For Questions 9 and 10, name the property illustrated by each equation.

9. $3ab + (-3ab) = 0$ 9. _____
10. $1xyz = xyz$ 10. _____
11. Simplify $\frac{1}{5}(10x - 15) + 4(2x - 5)$. 11. _____
12. Write an algebraic expression to represent the verbal expression *five times the sum of seven and a number*. 12. _____

Solve each equation.

13. $5n - 3 = 12$ 13. _____
14. $7x - 10 = 4x + 11$ 14. _____
15. $|6w + 3| = 9$ 15. _____
16. $|x - 4| - 5 = -2$ 16. _____

Define a variable, write an equation, and solve the problem.

17. The sum of 3 times a number and 1 is 25. Find the number. 17. _____

18. The length of a rectangular garden is 7 feet longer than its width. The perimeter of the garden is 38 feet. Find the width and length of the garden. 18. _____

For Questions 19–24, solve each inequality. Describe the solution set using set builder or interval notation. Then, graph the solution set on a number line.

19. $10t - 14 < 6$ 19. _____


20. $3(4x - 2) \geq 7x + 19$ 20. _____


21. $-7 < 9x + 2 < 11$ 21. _____


22. $5n + 7 < 2$ or $17 - 2n \leq 11$ 22. _____


23. $|x - 5| > 3$ 23. _____


24. $|2x + 1| \leq 9$ 24. _____


25. Define a variable and write an inequality. Then solve the resulting inequality. The 25 coins in Danielle's piggy bank have a value of at least \$1.44. The bank contains only nickels and dimes. What is the fewest number of dimes that could be in the bank? 25. _____