GEOMETRY SEMESTER I FINAL EXAM PRACTICE

1. A wooden fence is to be built around a 28 m-by-78 m lot. How many meters of fencing will be needed? If the wood for the fence costs $36.50 per meter, what will the wood for the fence cost?
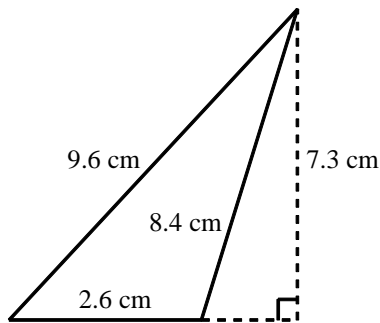
[A] 212 m, $79,716.00

[B] 2184 m, $7,738.00

[C] 212 m, $7,738.00

[D] 2184 m, $79,716.00

2. Find the area:

[A] 18.98 cm^2

[B] 9.49 cm^2

[C] 9.9 cm^2

[D] 19.8 cm^2

3. Your parents ask you to mow the lawn. It is a square plot that is 16 ft on each side and it has a square cement fountain in the center that is 6 ft on each side. What is the area of the lawn that you will mow?

4. A wire is bent into an equilateral triangle with a side measurment of   12. The same length of wire is then bent into a square. Find the side measurements of the square.

5. A line is perpendicular to $y = \dfrac{x}{3} - 2$ and passes through point (-4, 7). Write its equation.

6. Write the slope-intercept form of the equation of the line passing through the point (5, –6) and parallel to the line $y = 6x + 6.$

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7. Solve for x given $BD = \dfrac{7}{2}x + 2$ and $AE = 4x + 7$. Assume B is the midpoint of $\overline{AC}$ and D is the midpoint of $\overline{CE}$.
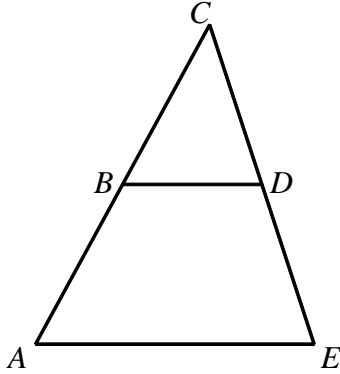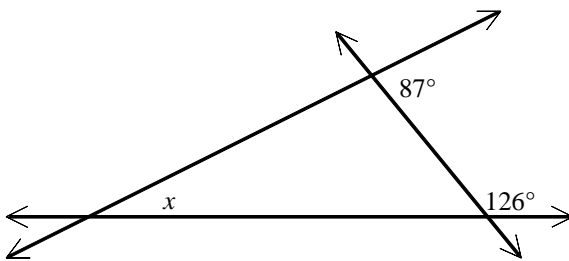

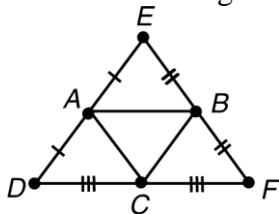[A] $\dfrac{8}{3}$

[B] 1

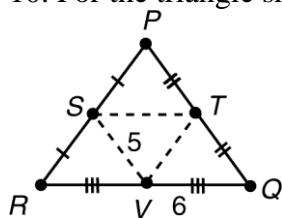[C] $-\dfrac{3}{8}$

[D] -1

8. Find the value of x.

9. Refer to the figure below.

If $EF = 5x + 6$ and $AC = 3x - 2$, then what is the length of $\overline{BF}$?

10. For the triangle shown, $VS = 5$ and $VQ = 6$. Then $PQ = $ _____.
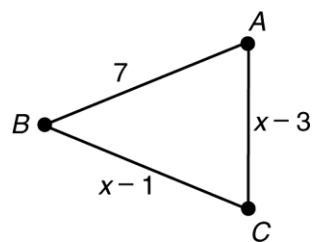

[A] 11

[B] 5

[C] 10

[D] 12

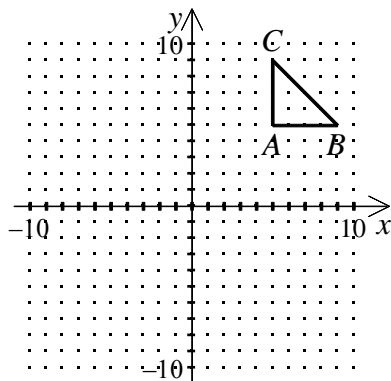11. Given: $\overline{AB} \cong \overline{BC}$

A. Solve for x. B. Is the triangle equilateral?

12. Graph the figure with vertices $(-1, 5)$, $(-3, 7)$, $(-4, 6)$, and $(-2, 4)$. Draw the rotation image for a rotation of $90°$ clockwise about the origin.

13. Find the image of $\triangle ABC$ after the glide reflection described.
Translation: $(x, y) \rightarrow (x, y-2)$; Reflection: in $x = 3$

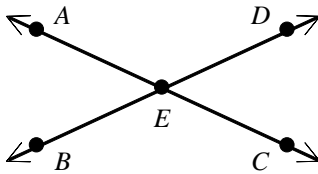14. Graph $\triangle PQR$ with $P(-4, -3)$, $Q(-4, -7)$, and $R(-7, -5)$. Graph $\triangle P'Q'R'$ after the

translation described by the vector $\langle 10, 9 \rangle$.

15. Find the midpoint of $\overline{QR}$ using the following information: Q(-8, -7) and $R(4, -5)$.

16. The midpoint of $\overline{QR}$ is $M(-1, -2)$. One endpoint is $Q(-6, 0)$. Find the coordinates of the other endpoint.

17. In the figure shown, $m\angle AED = 122°$. Which of the following statements is false?

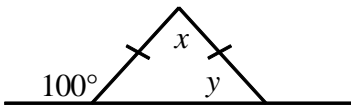

[A] $\angle BEC$ and $\angle CED$ are adjacent angles.

[B] $\angle AEB$ and $\angle DEC$ are vertical angles.

[C] $m\angle BEC = 58°$

[D] $m\angle AEB = 58°$

18. Find the values of x and y.

[A] $x = 20°$; $y = 80°$

[B] $x = 20°$; $y = 100°$

[C] $x = 80°$; $y = 60°$

[D] $x = 80°$; $y = 100°$

19. Which side lengths allow you to construct a triangle?

[A] 2, 3, and 8

[B] 6, 8, and 10

[C] 4, 1, and 9

[D] 7, 2, and 2

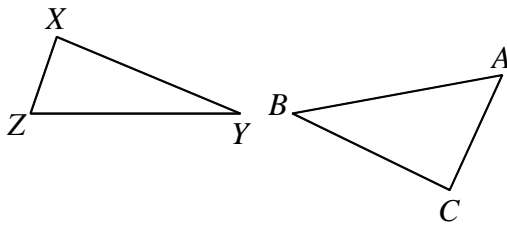20. Two sides of a triangle have lengths 7 and 13. The third side has a length that is _____.

[A] < 20 and > 6

[B] < 6

[C] > 6 and < 13

[D] > 20

21. Given the triangles below, if $\overline{ZY} \cong \overline{CB}$, $\overline{XY} \cong \overline{AB}$, and $m\angle B > m\angle Y$, decide which statement is true.
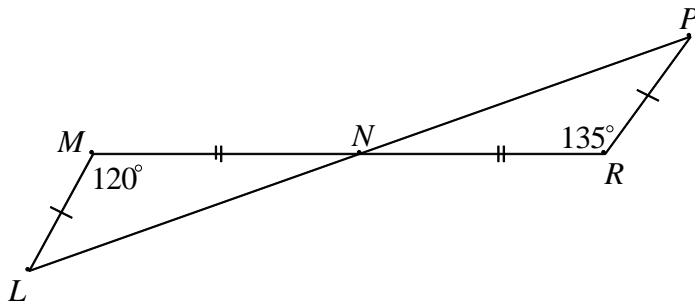

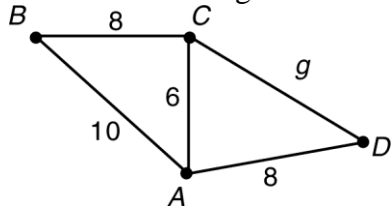[A] $YZ > BC$

[B] $XY < AB$

[C] $XZ < AC$

[D] $AC < XZ$

22. Which statement is false for the triangle in the diagram?
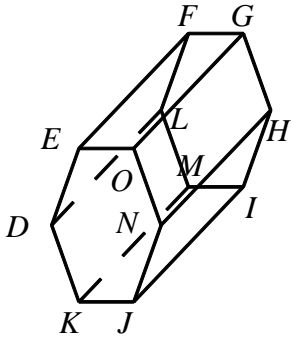
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[A] $LN > NP$

[B] $MN = NR$

[C] $LM = PR$

[D] $LN < NP$

23. Refer to the figure. What is the largest angle, that is part of a triangle, in the figure?

24. Rewrite the statement in if-then form.
All right triangles have an angle with a measure of 90 degrees.

[A] A figure has an angle with a measure of 90 degrees if and only if it is a right triangle.

[B] If a figure has an angle with a measure of 90 degrees, then it is a right triangle.

[C] A figure is a right triangle if and only if it has an angle with a measure of 90 degrees.

[D] If a figure is a right triangle, then it has an angle with a measure of 90 degrees.

25. "If an obtuse angle is bisected, then two acute angles are obtained." Decide whether the statement and its converse are true. If false, explain.

26. Which is a pair of parallel planes?

[A] *DEO* and *NHG*

[B] *EFG* and *NJI*

[C] *EFG* and *KMI*
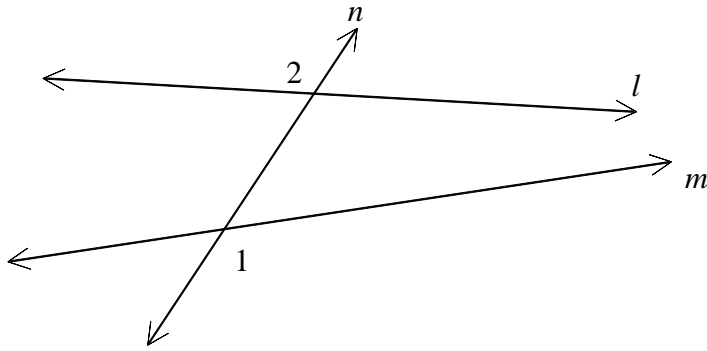
[D] *NJK* and *NJI*

27. Use the figure below.
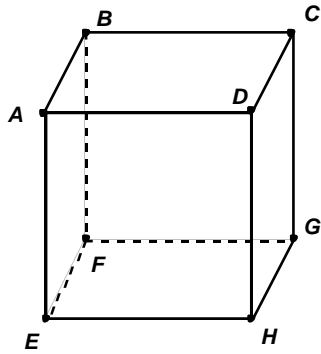
For the cube shown, $\overleftrightarrow{AD}$ and $\overleftrightarrow{HG}$ are _____.

[A] perpendicular lines

[B] oblique lines

[C] skew lines

[D] parallel lines

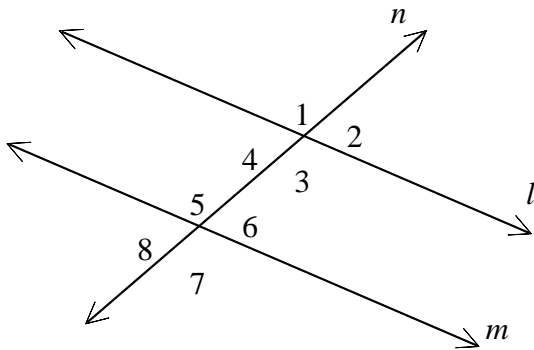28. In the figure, $\angle 1$ and $\angle 2$ are _____.

[A] corresponding angles

[B] consecutive interior angles

[C] alternate interior angles

[D] alternate exterior angles

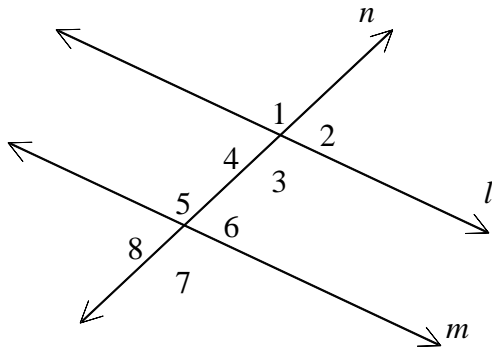29. In the figure, $\angle 6$ and $\angle 3$ are _____.

[A] consecutive interior angles
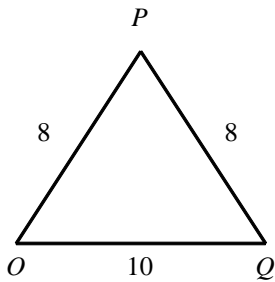
[B] corresponding angles

[C] alternate exterior angles

[D] alternate interior angles

30. In the figure, $\angle 6$ and $\angle 2$ are _____.

[A] consecutive interior angles

[B] corresponding angles

[C] alternate interior angles

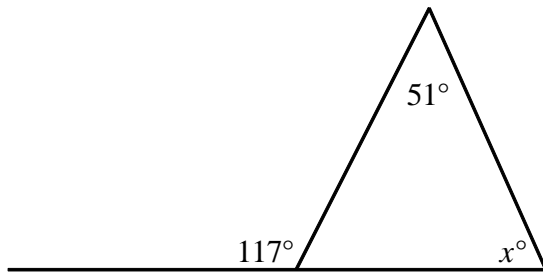[D] alternate exterior angles

31. Classify $\triangle OPQ$.

[A] Equilateral

[B] Isosceles

[C] Scalene

[D] none of these

32. Find the value of x.

51°

117°   x°
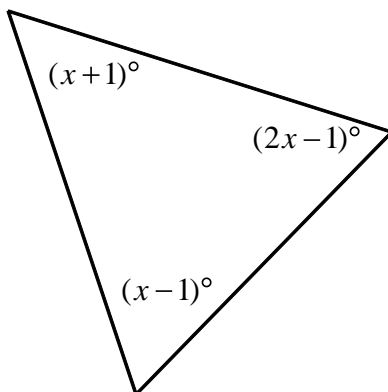
[A] 231

[B] 51

[C] 66

[D] 117

33. Find the measure of the interior angles to the nearest tenth. (Drawing is not to scale.)

$(x+1)°$

$(2x-1)°$

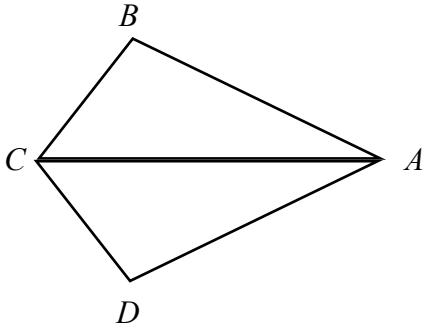$(x-1)°$

[A] $48.8°$, $42.3°$, $89.0°$

[B] $44.8°$, $45.3°$, $90.0°$
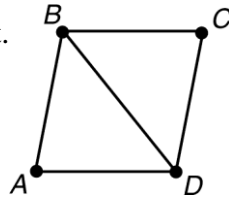
[C] $45.6°$, $48.4°$, $86.0°$

[D] $46.3°$, $44.3°$, $89.5°$

34. Given: $\angle BAC \cong \angle DAC$, $\angle B \cong \angle D$
     Prove: $\overline{BC} \cong \overline{DC}$

B

C A

D

35. Write a proof. Justify each statement. Given: $\overline{AB} \cong \overline{CD}$, $\overline{AB} \parallel \overline{CD}$ Prove:

B C

A D

$\triangle ABD \cong \triangle CDB$

Reference: [1.7.2.83]
[1] [C]

Reference: [1.7.1.81]
[2] [B]

Reference: [1.7.2.86]
[3] 220 ft^2

Reference: [1.7.2.85c]
[4] 9

Reference: [3.7.2.61b]
[5] y = -3x -5

Reference: [3.6.2.45]
[6] $y = 6x - 36$

Reference: [5.4.1.41]
[7] [B]

Reference: [4.1.2.14]
[8] 33°

Reference: [5.4.1.44]
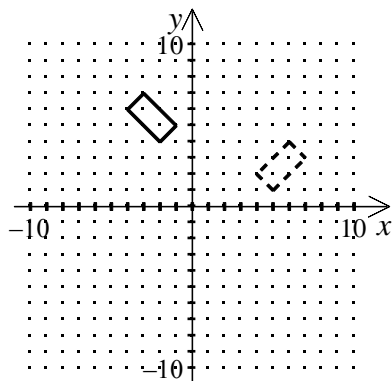[9] 28

Reference: [5.4.1.45]
[10] [C]

Reference: [4.1.1.9]
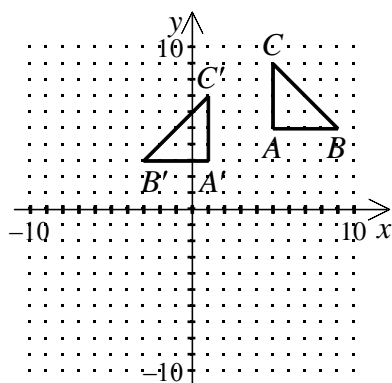[11] A. $x = 8$, B. No

Reference: [7.3.1.42]

[12]

Reference: [7.5.1.72]

[13]

Reference: [7.4.2.61]

[14]
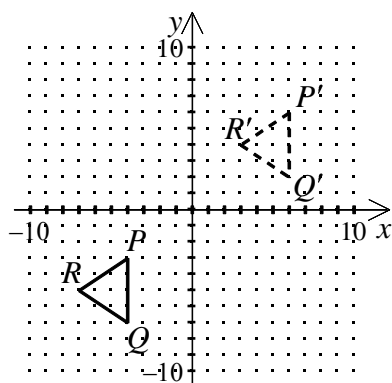
Reference: [1.5.1.56a]
[15] (−2,-6)

Reference: [1.5.1.56b]
[16] (4, –4)

Reference: [1.6.1.62]
[17] [C]

Reference: [4.6.1.83]
[18] [A]

Reference: [5.5.2.57]
[19] [B]

Reference: [5.5.2.59]
[20] [A]

Reference: [5.6.2.66]
[21] [C]

Reference: [5.6.2.68]
[22] [A]

Reference: [5.6.2.70]
[23] $\angle BCA$

Reference: [2.1.1.3]
[24] [D]

Reference: [2.1.1.6]
[25] Statement is true, converse is false. An acute angle bisected produces acute angles, also.

Reference: [3.1.1.1]
[26] [C]

Reference: [3.1.1.5]
[27] [C]

Reference: [3.1.2.8]
[28] [D]

Reference: [3.1.2.9]
[29] [A]

Reference: [3.1.2.10]
[30] [B]

Reference: [13.4.76]
[31] [B]

Reference: [13.4.80]
[32] [C]

Reference: [13.4.81]
[33] [D]

Reference: [13.4.94]

1. $\angle BAC \cong \angle DAC, \ \angle B \cong \angle D$	1. Given
2. $\overline{AC} \cong \overline{AC}$	2. Reflexive Property
[34] 3. $\triangle ABC \cong \triangle ADC$	3. AAS Congruence Theorem
4. $\overline{BC} \cong \overline{DC}$	4. Congruent Parts of Congruent Triangles are Congruent

Reference: [4.3.1.60]

	Statements	Reasons
	1. $\overline{AB} \cong \overline{CD}$	1. Given
[35]	2. $\overline{BD} \cong \overline{BD}$	2. Reflexive Property of Congruence
	3. $\overline{AB} \parallel \overline{CD}$	3. Given
	4. $\angle ABD \cong \angle CDB$	4. Alternate Interior Angles Theorem
	5. $\triangle ABD \cong \triangle CDB$	5. SAS Congruence Postulate