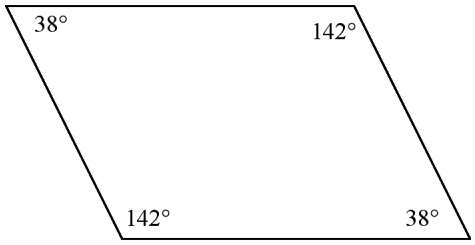
Name: _____ **Class:** _____ **Date:** _____ **ID: D**

Geometry Honors Final Exam 2010-11 REVIEW

Multiple Choice
Identify the choice that best completes the statement or answers the question.

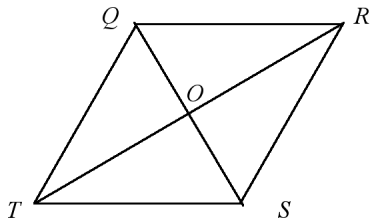
Determine whether the quadrilateral is a parallelogram. Justify your answer.

____ 1.



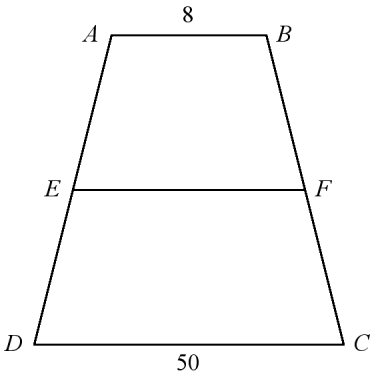
a. Yes; Opposite angles are congruent.
b. No; Opposite angles are congruent.
c. Yes; Consecutive angles are not congruent.
d. No; Consecutive angles are not congruent.

____ 2. In rhombus *QRST*, if $QR = 18$, find *ST*.



a. 9
b. 36
c. 18
d. $18\sqrt{2}$

____ 3. For trapezoid *ABCD*, *E* and *F* are midpoints of the legs. Let $\overline{GH}$ be the median of *ABFE*. Find *GH*.

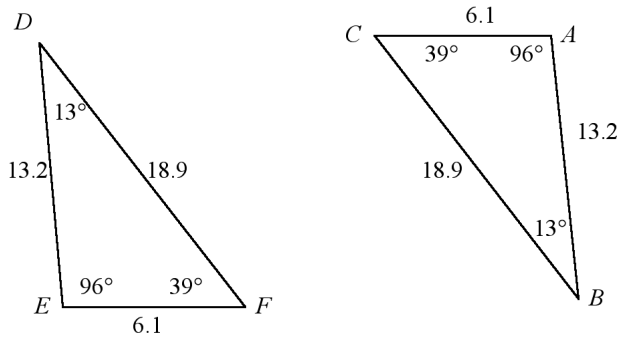


a. 42
b. 39.5
c. 18.5
d. 29

Name: _____ **ID: D**

Determine whether each pair of figures is similar. Justify your answer.

____ 4.

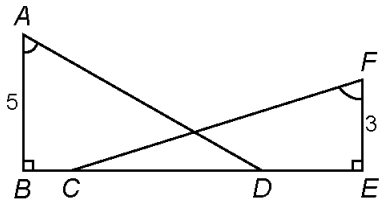


a. $\Delta DEF \sim \Delta BAC$ because the corresponding angles of each triangle are congruent. The ratio of the corresponding sides is 1.
b. ΔDEF is not similar to ΔBAC. The ratios of the corresponding sides are not the same.
c. ΔDEF is not similar to ΔBAC. Corresponding angles are not the same.
d. $\Delta DEF \sim \Delta ABC$ because the corresponding angles of each triangle are congruent. The ratio of the corresponding sides is 2.

Find x and the measures of the indicated parts.

____ 5.

BD and *CE*

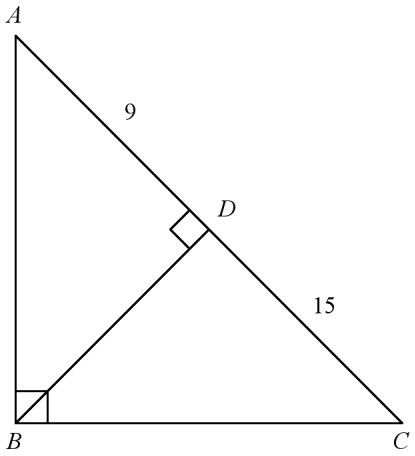


$BD = 4x$

$CE = 2x + 2$

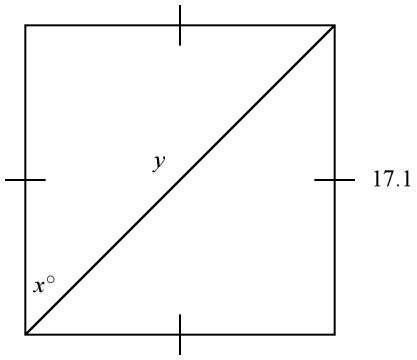
a. $x = 5, BD = 20, CE = 12$
b. $x = 5, BD = 20, CE = 8$
c. $x = \frac{3}{7}, BD = \frac{12}{7}, CE = \frac{20}{7}$
d. $x = 3, BD = 12, CE = 20$

____ 6. Find the measure of the $\overline{BD}$.



a. $3\sqrt{15}$
b. 135
c. $2\sqrt{6}$
d. 12

____ 7. Find x and y.

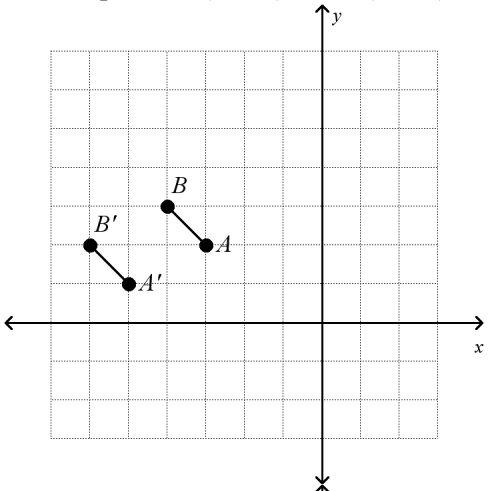


a. $x = 30°, y = 17.1$
b. $x = 45°, y = 17.1\sqrt{2}$
c. $x = 45°, y = 17.1$
d. $x = 30°, y = 17.1\sqrt{2}$

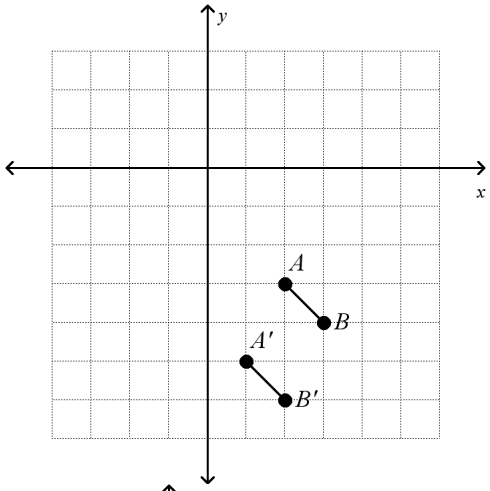
Graph each figure and its image under the given translation.

____ 8. $\overline{AB}$ with endpoints $A(-3, 2)$ and $B(-4, 3)$ under the translation left two units and down one unit

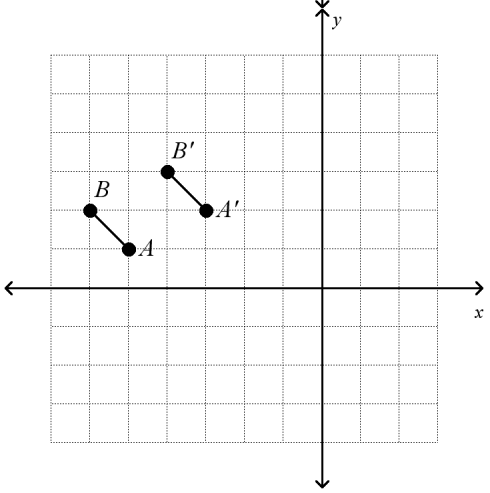
a.



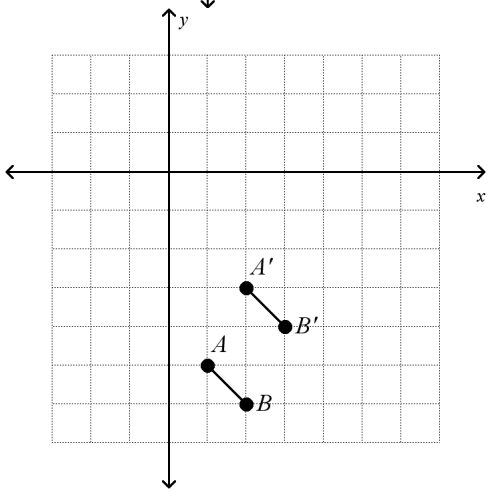
c.



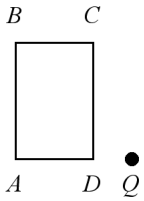
b.



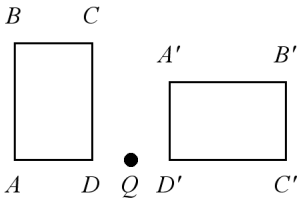
d.

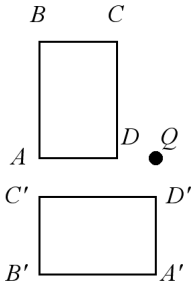


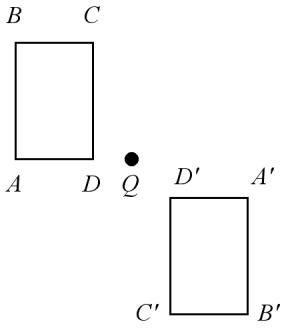
Copy parallelogram ABCD.

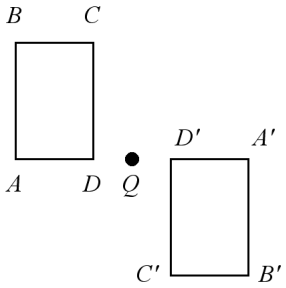


____ 9. Rotate the parallelogram 90° clockwise about point *Q*.

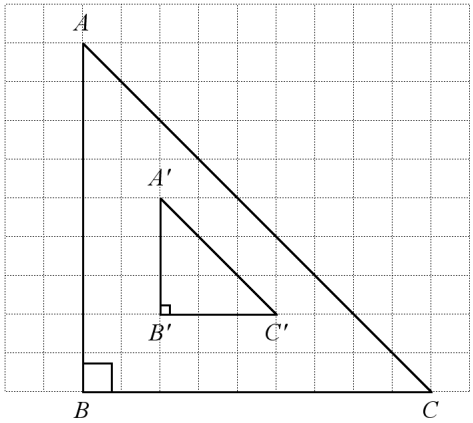
a. 

c. 

b. 

d. 

____ 10.



a. 3; enlargement

b. 3; reduction

c. $\frac{1}{3}$; enlargement

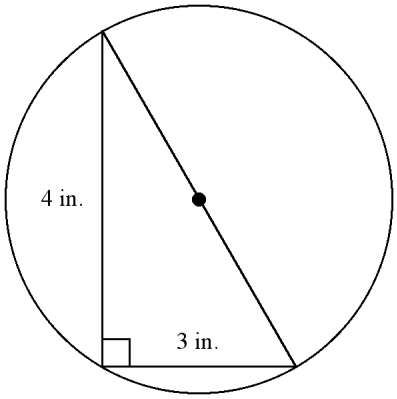
d. $\frac{1}{3}$; reduction

The radius, diameter, or circumference of a circle is given. Find the missing measures. Round to the nearest hundredth if necessary.

____ 11. $d = 27.9$ mm, $r =$ __?__, $C =$ __?__

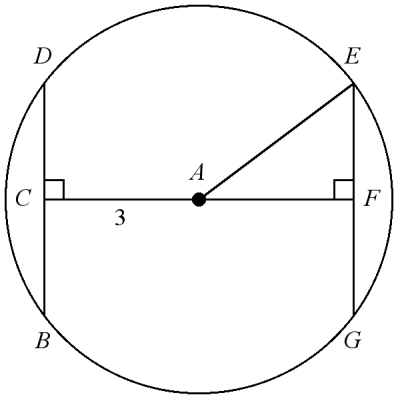
a. $r = 55.8$ mm, $C = 43.83$ mm
b. $r = 55.8$ mm, $C = 87.65$ mm
c. $r = 13.95$ mm, $C = 87.65$ mm
d. $r = 13.95$ mm, $C = 43.83$ mm

____ 12. Find the exact circumference of the circle.



a. 5π in.
b. 10π in.
c. 7π in.
d. 4π in.

____ 13. In $\odot A$, $\overline{AC} \cong \overline{AF}$ and AE = 5.

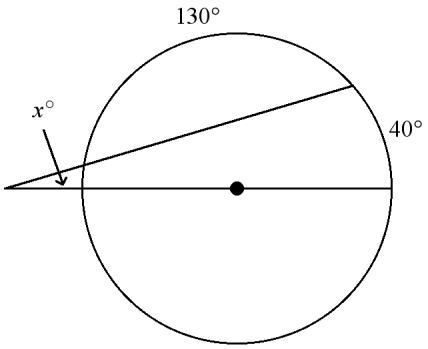


Find $m\overline{EG}$.

a. 7
b. 6
c. 8
d. 5

Find x. Assume that any segment that appears to be tangent is tangent.

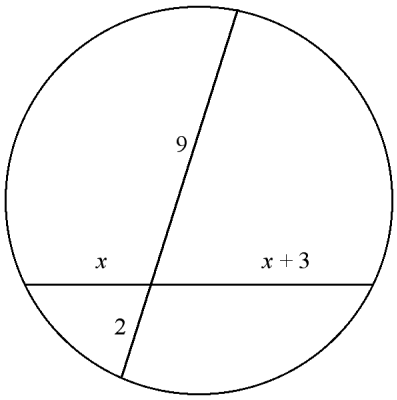
____ 14.



a. 10
b. 5
c. 12
d. 15

Find x. Round to the nearest tenth if necessary.

____ 15.

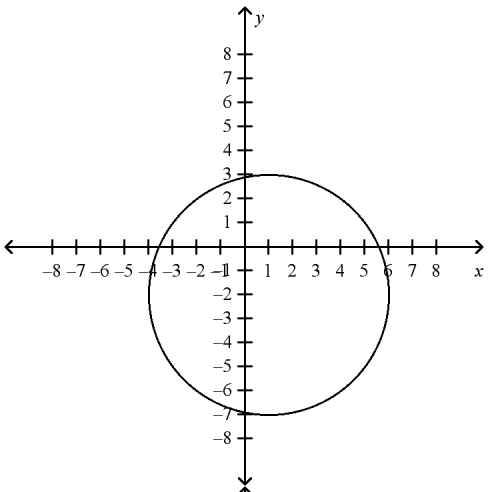


a. 6
b. 5
c. 4
d. 3

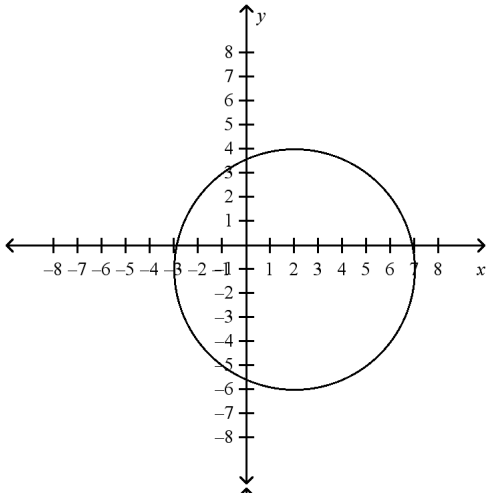
Graph the equation.

____ 16. $(x-1)^2+(y+2)^2=25$

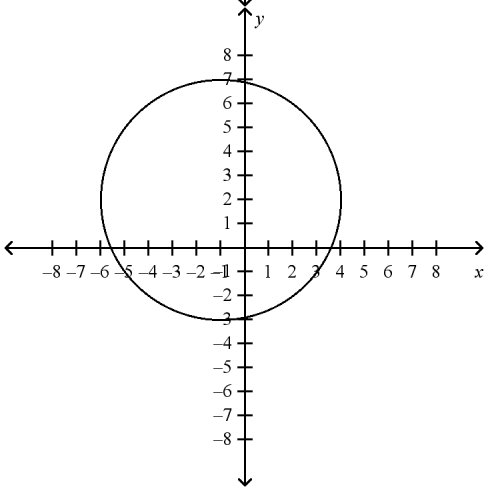
a.



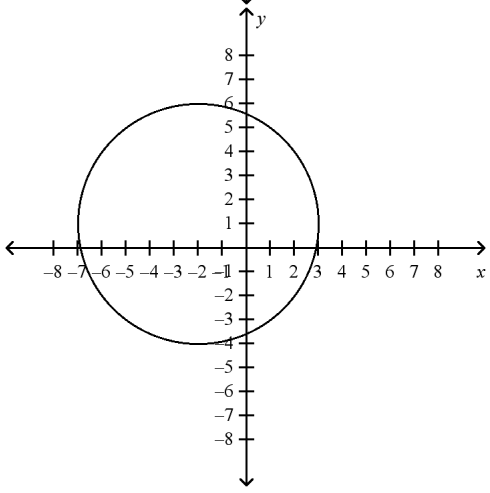
c.



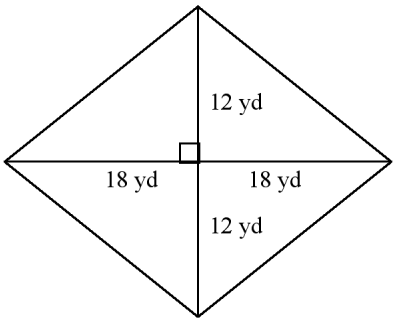
b.



d.



____ 17. Find the area of the figure. Round to the nearest tenth if necessary.



a. 864 yd^2

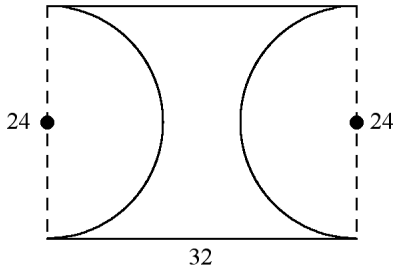
b. 216 yd^2

c. 432 yd^2

d. 60 yd^2

Find the area of the figure. Round to the nearest tenth if necessary.

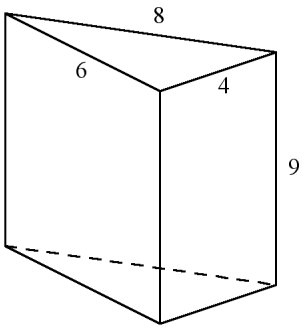
____ 18.



a. 541.9 units^2
b. 624 units^2
c. 192 units^2
d. 315.6 units^2

Find the lateral area of each prism. Round to the nearest tenth if necessary.

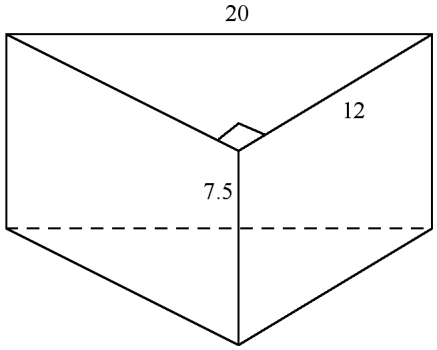
____ 19.



a. 162 units^2
b. 186 units^2
c. 210 units^2
d. 224 units^2

Find the surface area of each prism. Round to the nearest tenth if necessary while doing your calculations as well as in your final answer.

____ 20.



a. 586 units^2
b. 552 units^2
c. 456 units^2
d. 360 units^2

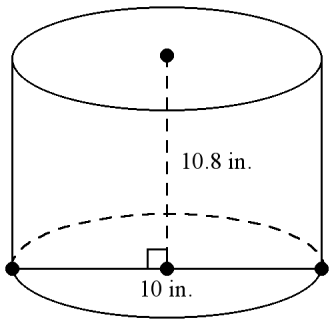
Find the slant height of the cone with the given measurements, rounded to the nearest hundredth. Then use your result to find the surface area of the cone. Use 3.14 for π. Round the final answer to the nearest ten-thousandth.

____ 21. height: 11 yards
diameter: 16 yards

a. 542.5920 yards^2
b. 341.6320 yards^2
c. 108.8000 yards^2
d. 1779.5008 yards^2

Find the volume of the cylinder. Use 3.14 for π. Round to the nearest tenth.

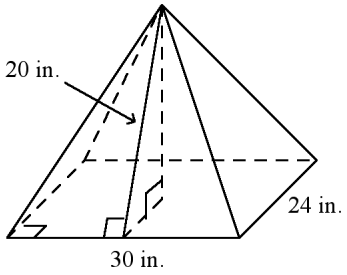
____ 22.



a. 169.6 in^3
b. 847.8 in^3
c. 3391.2 in^3
d. 270.0 in^3

Find the volume of the pyramid. Round to the nearest tenth if necessary.

____ 23.



a. 3840 in^3
b. 4800 in^3
c. 14,400 in^3
d. 11,520 in^3

Refer to Figure 1.

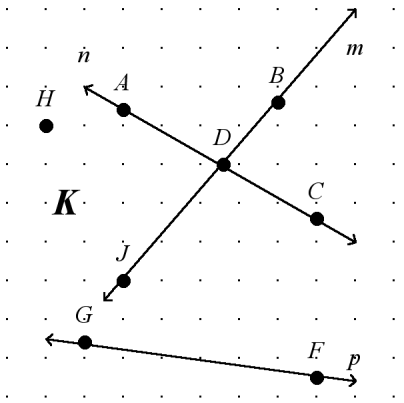


Figure 1

____ 24. Name a line that contains point *J*.

a. $\overleftrightarrow{DB}$
b. $\overleftrightarrow{GF}$
c. *n*
d. *p*

____ 25. What is another name for line *n*?

a. line *JB*
b. $\overleftrightarrow{DC}$
c. $\overleftrightarrow{GF}$
d. *AC*

____ 26. Name a point NOT contained in $\overleftrightarrow{AD}$ or $\overleftrightarrow{FG}$.

a. ***K***
b. *A*
c. *H*
d. *D*

Refer to Figure 2.

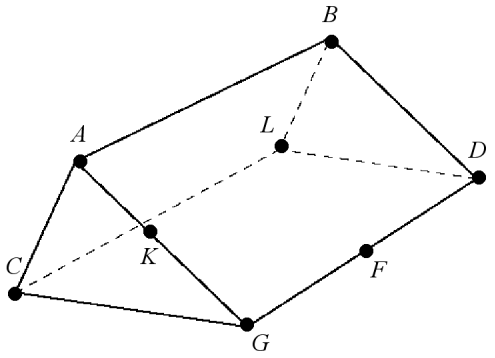


Figure 2

____ 27. Name four points that are coplanar.

a. *G, D, L, B*
b. *C, K, A, G*
c. *L, A, C, G*
d. *K, B, D, L*

____ 28. Name an intersection of plane *GFL* and the plane that contains points *A* and *C*.

a. line *LC*
b. *C*
c. line *AC*
d. plane *CAB*

____ 29. Find the value of the variable and *GH* if *H* is between *G* and *I*.

$GI = 6b + 1, HI = 4b - 2, HI = 14$

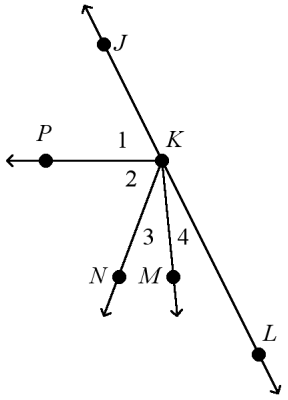
a. $b = 4, GH = 11$
b. $b = 1.5, GH = 10$
c. $b = 2.17, GH = 20.67$
d. $b = 4, GH = 25$

Find the coordinates of the midpoint of a segment having the given endpoints.

____ 30. $Q(-8, 10), R(8, 6)$

a. $(0, 8)$
b. $(1, 7)$
c. $(-16, 4)$
d. $(-8, 2)$

In the figure, $\overrightarrow{KJ}$ and $\overrightarrow{KL}$ are opposite rays. $\angle 1 \cong \angle 2$ and $\overrightarrow{KM}$ bisects $\angle NKL$.



____ 31. Which is NOT true about $\overrightarrow{KM}$?

a. $\angle MKJ$ is acute.
b. $\angle 3 \cong \angle MKL$
c. Point M lies in the interior of $\angle LKN$.
d. It is an angle bisector.

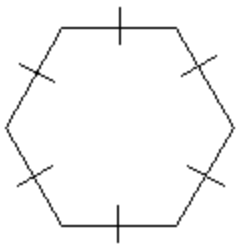
____ 32. If $m\angle NKL = 82$ and $m\angle MKN = 3s + 2$, what is $m\angle 4$?

a. 26.67
b. 13
c. 41
d. 15.67

____ 33. The measures of two complementary angles are $12q - 9$ and $8q + 14$. Find the measures of the angles.

a. 42, 48
b. 4.25
c. 8.75
d. 96, 84

Name each polygon by its number of sides. Then classify it as convex *or* concave *and* regular *or* irregular.

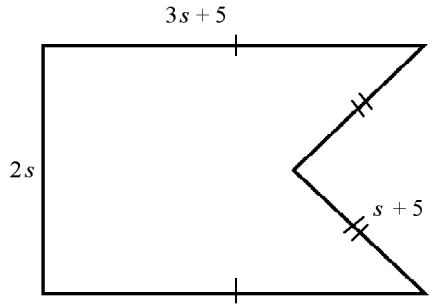


____ 34.

a. pentagon, convex, regular
b. hexagon, concave, regular
c. hexagon, convex, regular
d. hexagon, convex, irregular

Find the length of each side of the polygon for the given perimeter.

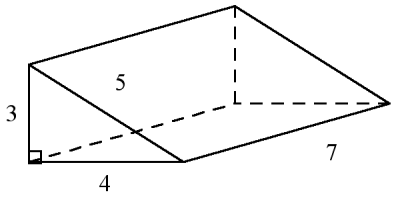
____ 35. $P = 100$ ft. Find the length of each side.



a. 41 ft, 41 ft, 17 ft, 17 ft, 24 ft
b. 29 ft, 29 ft, 13 ft, 13 ft, 16 ft
c. 50 ft, 50 ft, 20 ft, 20 ft, 30 ft
d. 33.5 ft, 33.5 ft, 14.5 ft, 14.5 ft, 19 ft

Find the volume of the solid.

____ 36.



a. 84 unit^3
b. 42 unit^3
c. 30 unit^3
d. 96 unit^3

Make a conjecture about the next item in the sequence.

____ 37. 6, 12, 9, 18, 15

a. 30
b. 45
c. 27
d. 12

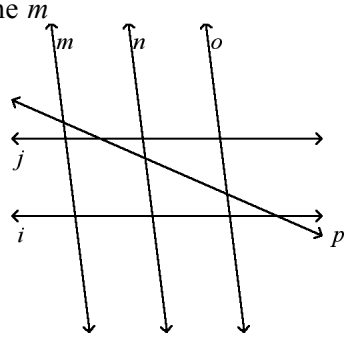
Write the contrapositive of the conditional statement. Determine whether the contrapositive is true *or* false*. If it is false, find a counterexample.*

____ 38. If you have a gerbil, then you are a pet owner.

a. If you are not a pet owner, then you do not have a gerbil. True
b. If you do not have a gerbil, then you are not a pet owner. False; you could have a dog.
c. If you are not a pet owner, then you have a gerbil. False; if you are not a pet owner then you have no pets.
d. If you are not a gerbil, then you are not a pet owner. True

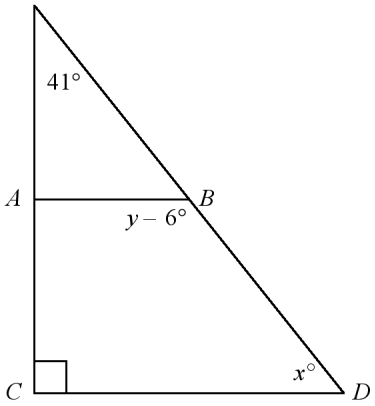
Identify the sets of lines to which the given line is a transversal.

____ 39. line m



a. lines n and o
b. lines j and i
c. lines i and j, p
d. lines j and i, i and p, j and p

____ 40. In the figure, $\overline{AB} \parallel \overline{CD}$. Find x and y.



a. $x = 29, y = 137$
b. $x = 41, y = 145$
c. $x = 137, y = 49$
d. $x = 49, y = 137$

Determine whether $\overleftrightarrow{WX}$ *and* $\overleftrightarrow{YZ}$ *are* parallel, perpendicular, or neither.

____ 41. $W(-2, -5), X(0, -1), Y(7, 3), Z(1, 3)$

a. perpendicular
b. neither
c. parallel

Find the distance between the pair of parallel lines.

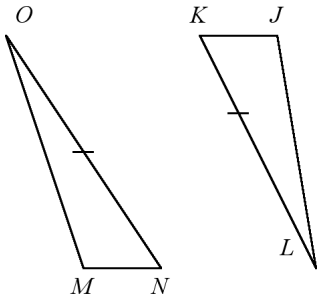
____ 42. $y = 2x + 2$

$y = 2x - 1$

a. $d = 1.41$
b. $d = 1.34$
c. $d = 1.6$
d. $d = 1.77$

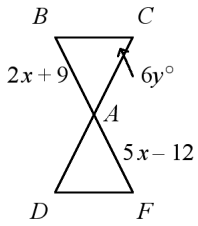
Identify the congruent triangles in the figure.

____ 43.



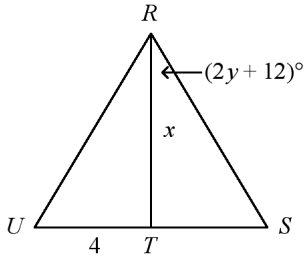
a. $\Delta KJL \cong \Delta OMN$
b. $\Delta JKL \cong \Delta ONM$
c. $\Delta KLJ \cong \Delta ONM$
d. $\Delta LJK \cong \Delta OMN$

____ 44. Triangles *ABC* and *AFD* are vertical congruent equilateral triangles. Find x and y.



a. $x = 1, y = 5$
b. $x = 7, y = 10$
c. $x = 1, y = 10$
d. $x = 7, y = 5$

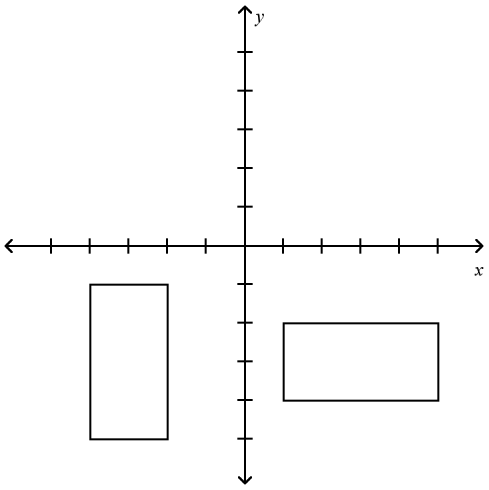
____ 45. Triangle *RSU* is an equilateral triangle. $\overline{RT}$ bisects $\overline{US}$. Find x and y.



a. $x = 4\sqrt{5}, y = 9$
b. $x = 4\sqrt{3}, y = 21$
c. $x = 4\sqrt{5}, y = 21$
d. $x = 4\sqrt{3}, y = 9$

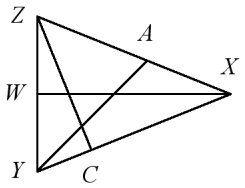
Identify the type of congruence transformation.

____ 46.



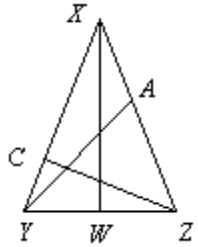
a. reflection or translation
b. rotation only
c. rotation or translation
d. reflection only

____ 47. $\overline{ZC}$ is an altitude, $\angle CYW = 5x + 21$, and $\angle WZC = 18x$. Find $m\angle WZC$.



a. 54
b. 32
c. 51
d. 15

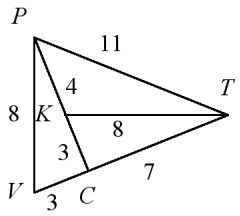
____ 48. $\overline{XW}$ is an angle bisector, $\angle YXZ = 7x + 29$, $\angle WXY = 9x - 13$, and $\angle XZY = 10x$. Find $m\angle WZX$. Is $\overline{XW}$ an altitude?



a. 47; yes
b. 32; no
c. 21; no
d. 50; no

Determine the relationship between the measures of the given angles.

____ 49. $\angle CKT$, $\angle VTP$



a. $\angle CKT < \angle VTP$
b. $\angle CKT = \angle VTP$
c. $\angle CKT > \angle VTP$

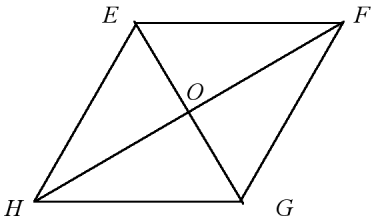
Determine whether the given measures can be the lengths of the sides of a triangle. Write yes *or* no. *Explain.*

____ 50. 6, 7, 10
a. No; the sum of the lengths of two sides is not greater than the third.
b. No; the first side is not long enough.
c. Yes; the sum of the lengths of any two sides is greater than the third.
d. Yes; the third side is the longest.

____ 51. Find the measure of each interior angle for a regular nonagon. Round to the nearest tenth if necessary.
a. 360
b. 140
c. 40
d. 1260

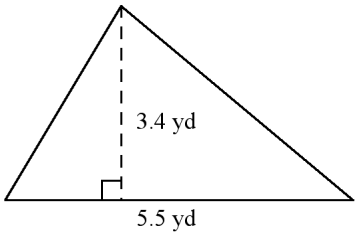
____ 52. Find the measure of an exterior angle of a regular polygon with 9 sides. Round to the nearest tenth if necessary.
a. 40
b. 140
c. 1260
d. 360

____ 53. In rhombus *EFGH*, if $EF = 22$, find *GH*.



a. 11
b. 22
c. 44
d. $22\sqrt{2}$

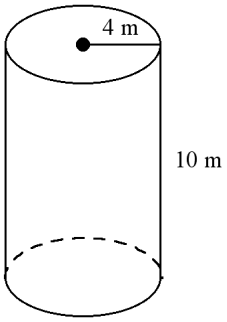
____ 54. Find the area of the figure. Round to the nearest tenth if necessary.



a. $18.7\ yd^2$
c. $6\ yd^2$
b. $9.4\ yd^2$
d. $9\ yd^2$

Find the surface area of the cylinder. Use 3.14 for pi and round your answer to the nearest tenth.

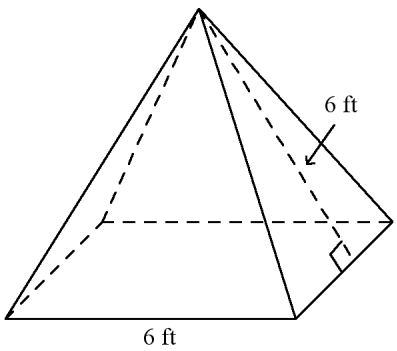
____ 55.



a. $261.9\ m^2$
c. $251.2\ m^2$
b. $351.7\ m^2$
d. $476.0\ m^2$

Find the surface area of the regular pyramid. Round to the nearest tenth if necessary.

____ 56.



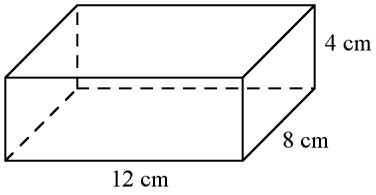
a. $108.0\ ft^2$
c. $144.0\ ft^2$
b. $216.0\ ft^2$
d. $72.0\ ft^2$

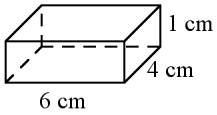
____ 57. Suppose a spherical snowball with a diameter of 6 centimeters is melted in a large bowl. The resulting water is then poured into a cone-shaped paper cup that is 10 centimeters deep and has a diameter of 6 centimeters. The water overflows the paper cup, as the volume of the snowball turns out to be more than that of the paper cup. How much greater is the snowball's volume than that of the cone-shaped cup? Use 3.14 for π and round your answer to the nearest tenth.

a. 527.5 cm^3
c. 29.3 cm^3
b. 18.8 cm^3
d. 9.2 cm^3

Determine whether the pair of solids are similar, congruent, or neither. Figures are not necessarily drawn to scale.

____ 58.





a. similar
c. neither
b. congruent
d. cannot be determined

Write an equation in slope-intercept form of the line having the given slope and y*-intercept.*

____ 59. $m: -\frac{2}{7}, (0, -2)$

a. $y = -\frac{2}{7}x$
c. $y = -\frac{2}{7}x - 2$
b. $y = \frac{4}{7}x$
d. $y = -2x - \frac{2}{7}$

Write an equation in point-slope form of the line having the given slope that contains the given point.

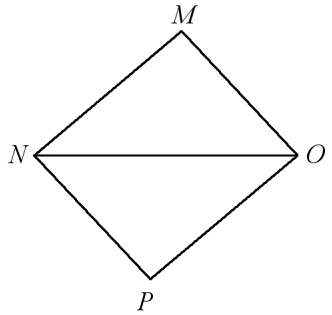
____ 60. $m = -3, (-2, 1)$

a. $y = -3x + 3$
c. $y + 2 = -3(x - 1)$
b. $y - 3 = -2(x - 1)$
d. $y - 1 = -3(x + 2)$

____ 61. Justify the last two steps of the proof.

Given: $\overline{MN} \cong \overline{PO}$ and $\overline{MO} \cong \overline{PN}$

Prove: $\Delta MNO \cong \Delta PON$

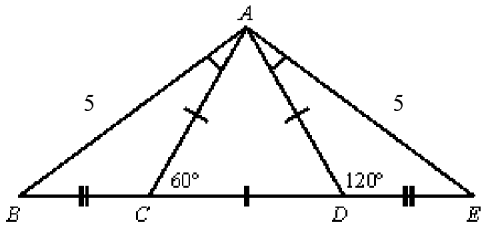


Proof:

1. $\overline{MN} \cong \overline{PO}$	1. Given
2. $\overline{MO} \cong \overline{PN}$	2. Given
3. $\overline{NO} \cong \overline{ON}$	3. ?
4. $\Delta MNO \cong \Delta PON$	4. ?

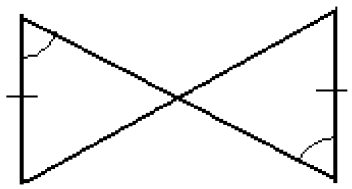
a. Symmetric Property of $\cong$; SSS
b. Symmetric Property of $\cong$; SAS
c. Reflexive Property of $\cong$; SSS
d. Reflexive Property of $\cong$; SAS

____ 62. State whether ΔABC and ΔAED are congruent. Justify your answer.



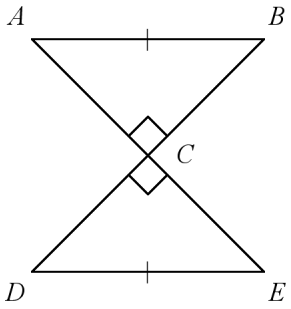
a. yes, by SSS only
b. yes, by SAS only
c. yes, by either SSS or SAS
d. No; there is not enough information to conclude that the triangles are congruent.

____ 63. Can you use the SAS Postulate, the AAS Theorem, or both to prove the triangles congruent?



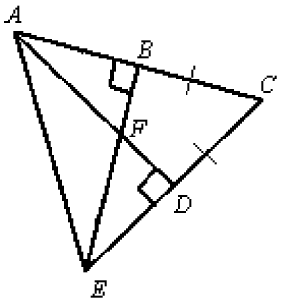
a. AAS only
b. SAS only
c. either SAS or AAS
d. neither

____ 64. What additional information will allow you to prove the triangles congruent by the HL Theorem?



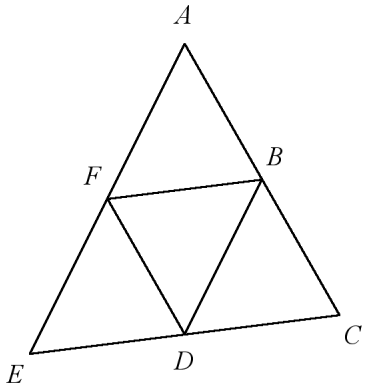
a. $\angle A \cong \angle E$
b. $m\angle BCE = 90$
c. $\overline{AC} \cong \overline{DC}$
d. $\overline{AC} \cong \overline{BD}$

____ 65. Which overlapping triangles are congruent by ASA?



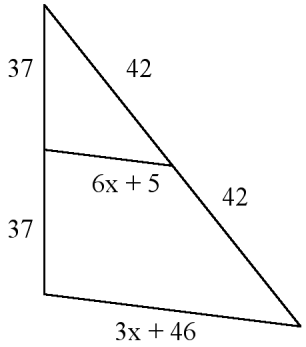
a. $\Delta ADC \cong \Delta EBC$
b. $\Delta ABE \cong \Delta CDA$
c. $\Delta ABE \cong \Delta DEA$
d. $\Delta ADC \cong \Delta EDA$

____ 66. Points B, D, and F are midpoints of the sides of ΔACE. $EC = 40$ and $DF = 25$. Find AC. The diagram is not to scale.



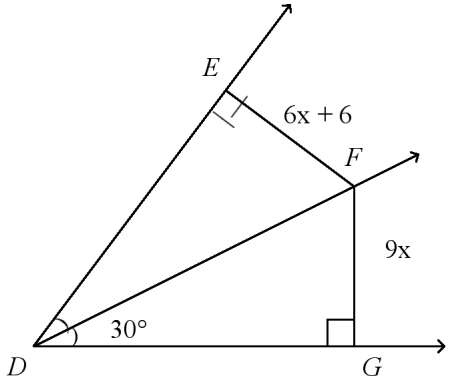
a. 80 b. 50 c. 12.5 d. 40

____ 67. Find the length of the midsegment. The diagram is not to scale.



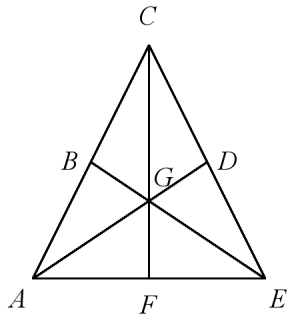
a. $13.\overline{6}$ b. 58 c. 29 d. 26

____ 68. $\overrightarrow{DF}$ bisects $\angle EDG$. Find the value of x. The diagram is not to scale.



a. 30 b. 2 c. $\frac{5}{2}$ d. 18

____ 69. In ΔACE, G is the centroid and $BE = 21$. Find BG and GE.



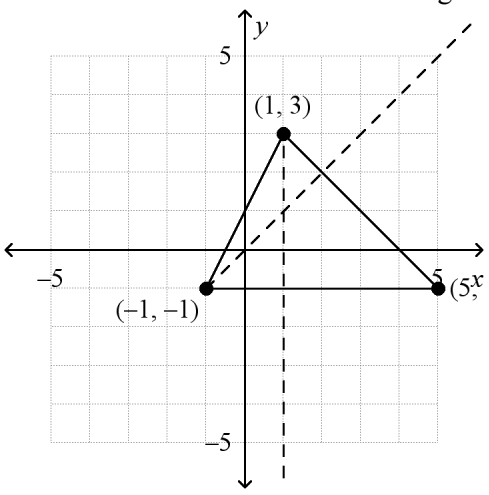
a. $BG = 5\frac{1}{4}$, $GE = 15\frac{3}{4}$

b. $BG = 14$, $GE = 7$

c. $BG = 7$, $GE = 14$

d. $BG = 10\frac{1}{2}$, $GE = 10\frac{1}{2}$

____ 70. What is the orthocenter of the triangle with two altitudes given by the lines $x = 1$ and $y = x$?



a. $(0,2)$

b. $(2,2)$

c. none of these

d. $(1,1)$