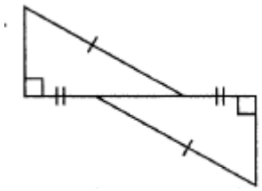
RISING GRADE TEN SUMMER REVIEW PACKET

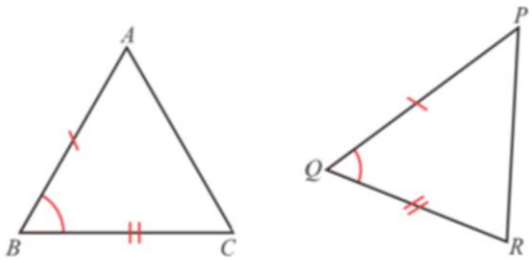
DUE ON THE FIRST DAY OF SCHOOL

The problems in this packet are designed to help you review topics from previous mathematics courses that are essential to your success in your next math class. **You are expected to bring this completed packet to class on the first day of school.** In addition, this packet will count as part of your first quarter grade. **Upon returning, you will be ASSESSED on the content of this packet**. All contents outlined in the packet are Integrated Geometry objectives. Neatly **SHOW YOUR WORK** on a separate sheet of paper in order to receive full credit.

1. What triangle congruence theorem could you use to prove the following triangles congruent?

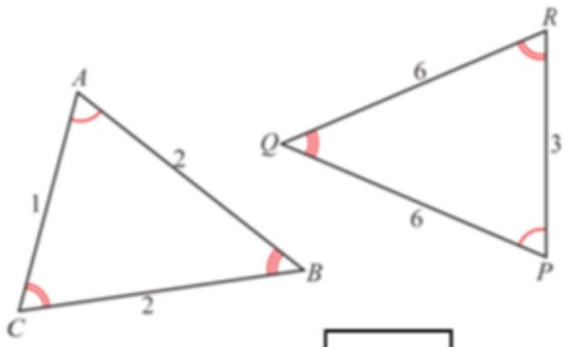


2. In the following figure, determine the congruence rule by which the triangles are congruent to each other.



Congruence rule: ☐

3 Using the following figure, determine the similarity ratio of $\triangle ABC$ to $\triangle PQR$.



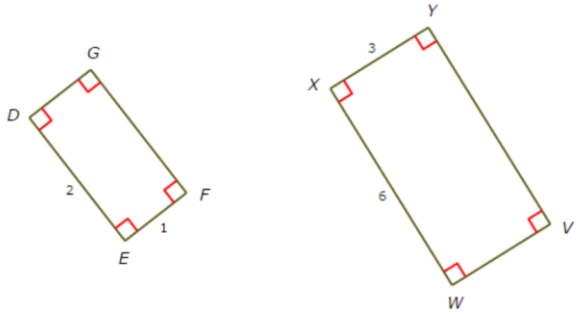
Similarity ratio: ☐

4 **Directions - use the following congruence statement to tell if each statement is true or false:**

$\triangle ABC \cong \triangle MTR$

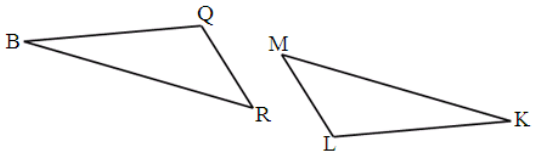
$\angle M \cong \angle A$	○ True	○ False
$\angle B \cong \angle R$	○ True	○ False
$\overline{CA} \cong \overline{MT}$	○ True	○ False
$\overline{BC} \cong \overline{TR}$	○ True	○ False

5 The two polygons shown below are similar. Complete the similarity statement given below.



$DEFG \sim$ ☐

6 Consider the figure shown below. Use the fact that $\triangle BQR \cong \triangle KLM$ to complete the congruence table shown below.



Parts of triangle BQR	Parts of triangle KLM
B	1
RB	2
R	M
QR	3

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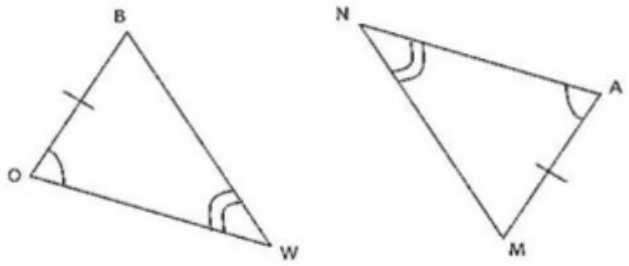
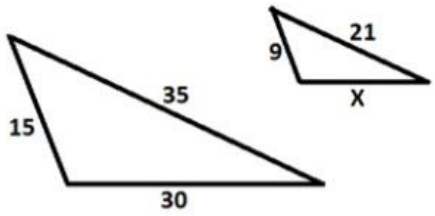
7 **Directions - use the diagram to complete the congruence statement:**



$\triangle BOW \cong \triangle$ [ ]

8 The following triangles are similar. What proportions could be used to solve for x. Then, solve for x.



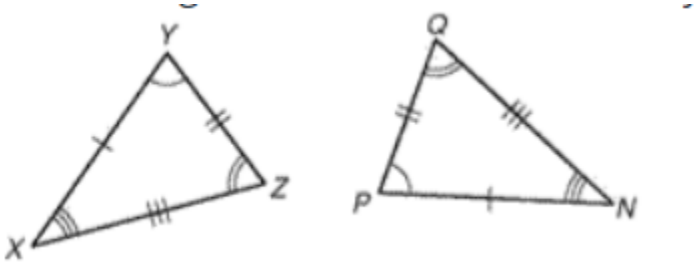
9 What other information do you need in order to prove the triangles congruent using the SAS Congruence Postulate?

10 **Solve for x in this proportion. Show all work on a separate sheet of paper:**

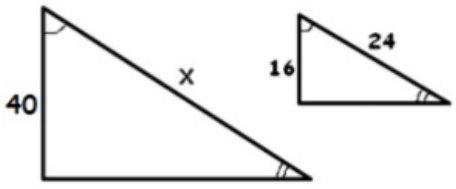
$$\frac{x+7}{9} = \frac{8}{5}$$

11

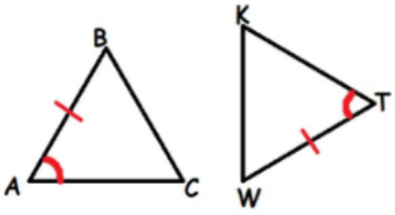
What congruence statement correctly indicates that the two triangles at right are congruent?



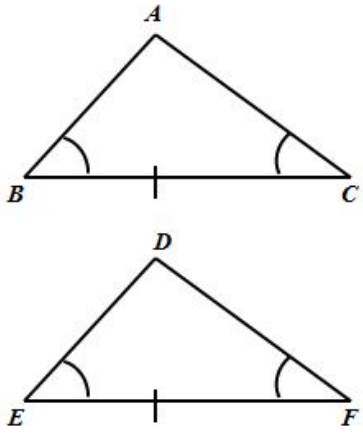
12 **The triangles shown are similar. Create a proportion to find x. Show all work on paper:**



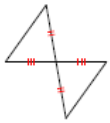
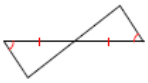
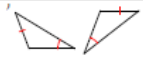
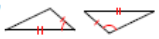
13 **What additional information would be needed to prove these triangles are congruent by SAS?**



14 Which postulate can be used to prove that the following triangles are congruent.



15 Check the box that proves the triangles congruent or none if applicable.

Triangles	SSS	SAS	ASA	AAS	NONE
	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐

16 Two right triangles are proportional. The shortest leg of the small triangle is 4 in and the hypotenuse is 12 in. The shortest leg of the large triangle 8 in. Find the length of the hypotenuse of the large triangle.

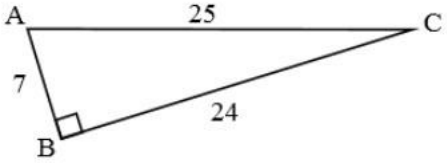
(A) 12

(B) 21

(C) 20

(D) 24

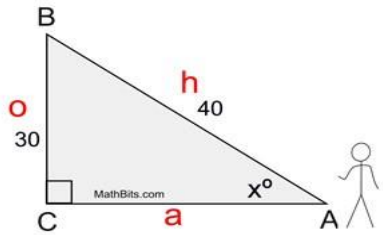
17. Match the following trigonometric ratios with the correct equation for the triangle shown below.



$\sin A =$ $\sin C =$

$\cos A =$ $\cos C =$

18 1) Find the measure of $m\angle\theta$. Round to one decimal place.
2) Then, nd the measure of AC. Round to one decimal place.



$m\angle x =$ ____

$AC =$ ____

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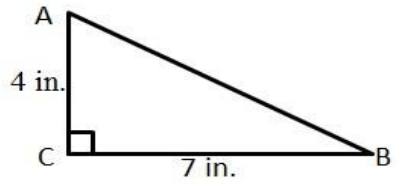
19 1) Find the measure of $\angle\theta$. Round to one decimal place.
2) Then, nd the measure of $\overline{AB}$. Round to one decimal place.



$m\angle B =$ ____

$AB =$ ____

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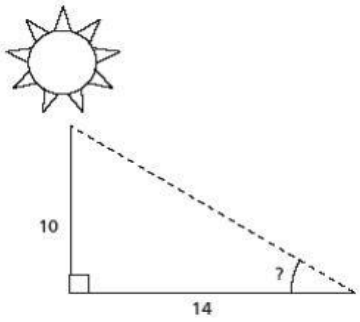
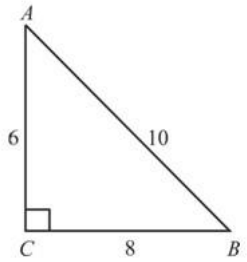
20 Find the angle measure below. Round to the nearest degree.



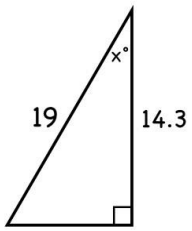
21. Using the figure below determine the following ratios.



Note: Evaluate your answer to simplest fraction form.

Ratio	Value
sin A	1
cos A	2
tan A	3
sin B	4
cos B	5
tan B	6

22 In the gure below, we want to nd the missing angle.
Which trigonometric equation would help us do that?



(A) $\sin x = \frac{19}{14.3}$

(B) $\sin x = \frac{14.3}{19}$

(C) $\cos x = \frac{19}{14.3}$

(D) $\cos \vartheta = \frac{14.3}{19}$

(E) $\tan x = \frac{19}{14.3}$

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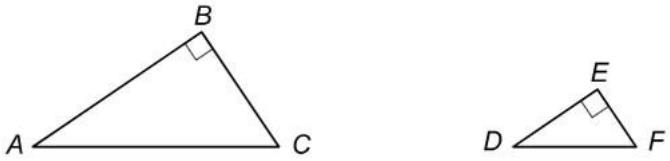
23 Triangles ABC and DEF are right triangles, as shown. Triangle ABC is similar to triangle DEF.



Which ratios are equal to sin C ?
Select all that apply.

A $\frac{AB}{AC}$

B $\frac{AB}{BC}$

C $\frac{BC}{AC}$

D $\frac{DE}{DF}$

E $\frac{DE}{EF}$

F $\frac{EF}{DF}$

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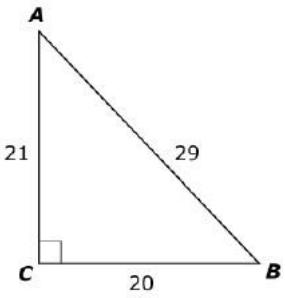
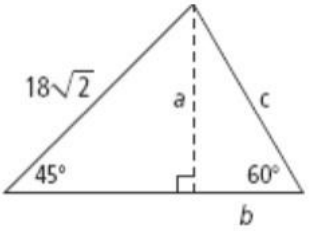
24 Consider this right triangle.



Enter the ratio equivalent to $\sin(B)$.

Use Special Right Triangles to nd the value of a, b, and c

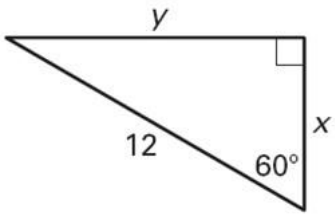


a =

b =

c =

26

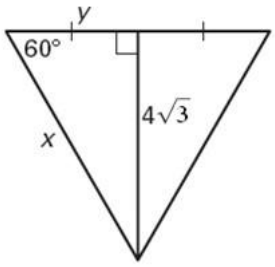


Using your knowledge of special right triangles, nd the values of x and y. Leave your answers in simplest radical form.

x =

y =

27

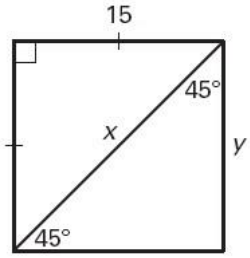


Using your knowledge of special right triangles, nd the values of x and y above. Leave your answers in simplest radical form.

x =

y =

28

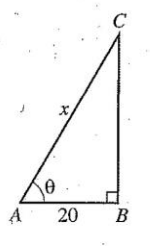


x =

y =

Using your knowledge of special right triangles, nd the values of x and y. Leave your answers is simplest radical form.

29 In the gure below, $\overline{AC}$ represents a support wire x feet long. The wire is attached to a tower at C and to the ground at A. The distance between A and B, which is at the base of the tower, is 20 feet. The angle at A has measure ϑ. Which of the following must be true?



(A) $\cos \vartheta = \frac{20}{x}$

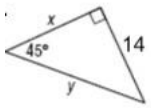
(B) $\sin \vartheta = \frac{20}{x}$

(C) $\sin \vartheta = \frac{x}{20}$

(D) $\tan \vartheta = \frac{20}{x}$

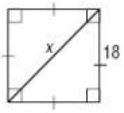
(E) $\tan \vartheta = \frac{x}{20}$

Use special right triangles to determine the value of the variables in each triangle. Be sure to leave your answers in simpli ed radical form.

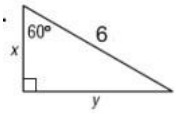


x =

y =

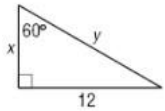


x =



x =

y =



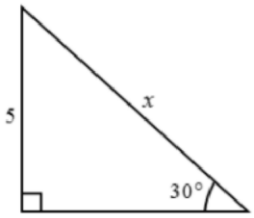
x =

y =

Use two di erent methods to solve for the length of side x. Show your work using the drawing tools, or describe your process below.

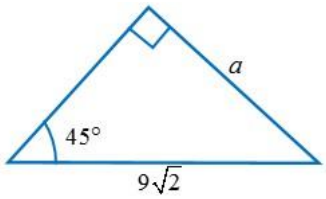
Make sure to include an answer in your response.

(a) Method #1 (using special right triangles) Method #2 (using TRIG)



(b)

32 In the triangle shown below, nd the value ofa.



a =

33 Consider the following quadratic equations given in the rst column. Identify whether the roots of the given quadratic equations are imaginary or real.

Quadratic Equations	Imaginary roots	Real roots
$x^2 + 2x + 5 = 0$	☐	☐
$x^2 + 6x - 7 = 0$	☐	☐
$x^2 + 5x + 6 = 0$	☐	☐

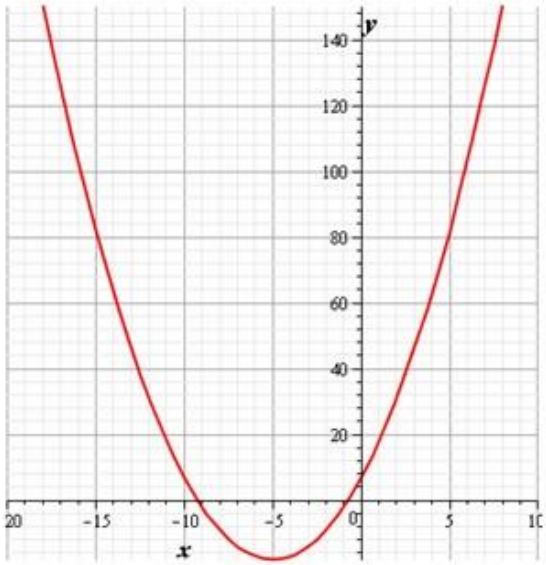
D

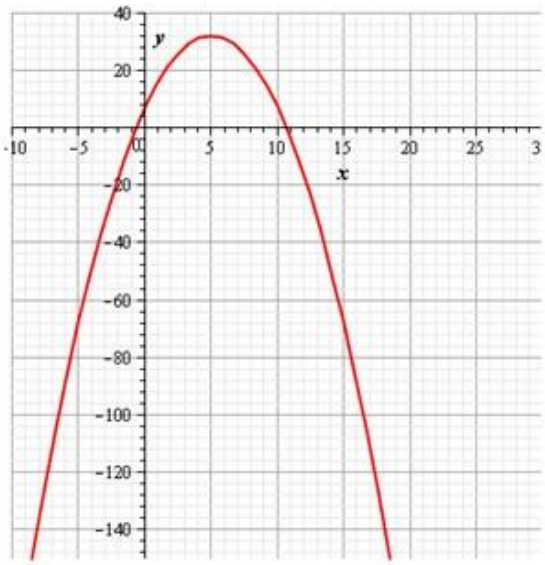
34 For the following graphs, match their corresponding quadratic equations.

DRAG & DROP THE ANSWER

$-x^2 + 10x + 7$

$x^2 + 10x + 7$





Equation:

Equation:

35 Which of the following quadratic equations would open up (or have a minimum)? There may be more than one.

A $y = x^2 - 2x + 1$

B $y = -3x^2 + 4x - 10$

C $y = -\frac{1}{3}x^2 + 3x - 7$

$y = -x^2 - 3x + 1$

E $2x^2 + 7x = 10$

36 For the quadratic equations given in the rst column select the type of solutions by the value of their discriminant.

Quadratic equation	Two irrational solutions	Two rational solutions	One rational solution	Two complex solutions
$2x^2 + 4x + 1 = 0$	○	○	○	○
$2x^2 + 4x + 3 = 0$	○	○	○	○
$2x^2 + 4x + 2 = 0$	○	○	○	○

37Which of the following quadratic equations are in standard form.

Select the 3 that apply. $x^2 - 3x + 6 = 0$

A $-9x^2 = 4x - 10$

B $2(x^2 + 3x + 12) = 0$

C $5x^2 + 3x = 14 - 8x$

D $0 = 10x^2 - 9x - 70$

E

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38 Solve the following quadratic equations (Write answer as values of x i.e. x=4 and x=-3)

$14x^2 + 7x = 4x^2 - 1$

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39 Select all quadratic equations that would have a vertex of (2, -3) and a y intercept of (0, 5).

A $f(x) = 2(x - 2)^2 - 3$

B $f(x) = (x - 4)^2 + 3$

C $f(x) = (x - 2)(x + 3)$

D $f(x) = 2x^2 - 8x + 5$

E $f(x) = x^2 - 2x + 5$

---

40 Which of the following quadratic equations would open up (or have a minimum)? There may be more than one.

A $y = -3x^2 + 4x - 10$

B $y = x^2 - 2x + 1$

C $\frac{1}{3}\left(3x + 1\right)^2 - 1 = y$

D $y = -\frac{1}{2}x^2 + 3x - 7$

E $2x^2 + 7x = 10$

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41 Which of the following would be a good reason for grouping the following two quadratic equations together?

$y = -2(x - 2)^2 + 5$ and $y = 4(x - 3)^2 - 1$

(A) Both are shifted left

(B) Both are concave down

(C) Both are vertically stretched

(D) Both are shifted up

42 Solve the following quadratic equations by factoring, taking the square roots, completing the square, or using the quadratic formula.

1. $(x-4)^2 - 4 = 21$

x = [ ] or x = [ ]

2. $5x^2 - 4x - 4 = 0$

x = [ ]

3. $x^2 + 4x + 20 = 10$

x = [ ]

43 Solve the following quadratic equations by factoring, taking the square roots, completing the square, or using the quadratic formula.

1. $3x^2 = 63 + 12x$

x = [ ] or x = [ ]

2. $r^2 - 10r - 61 = 4$

x = [ ]

3. $3x^2 + 9x + 2 = 0$ x = [ ]

4. $x^2 + 4x + 20 = 10$

x = [ ]

44 Which two of the following values are solutions to the quadratic equation below?

$x^2 - 3x - 3 = 7$

[A] -5

B -3

C -2

D -1

E 1

F 2

G 3

H 5

45 The solutions to $(x + 4)^2 - 2 = 7$ are

A $-4 \pm \sqrt{5}$

B $4 \pm \sqrt{5}$

C -1 and -7

D 1 and 7

---

46 Solve the equation by factoring.

Report solution(s) in order from least to greatest. Separate solutions with a comma.
Exact answers only (no decimal answers).

$3x^2 - 16x - 12 = 0$

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47 Consider the quadratic function written below in intercept form.

$f(x) = (x - 2)(x - 4)$

Which of the following represents the vertex of the quadratic function?

A (2,0)

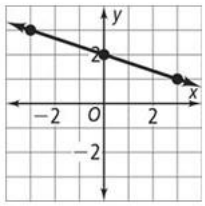
B (3,0)

C (4,0)

D (2,4)

E (3,−1)

48 Directions - Find the slope ($\frac{rise}{run}$).



Slope:

49 Find the equation of line in slope in slope-intercept form if its *y*-intercept and slope is given in the rst column. Match them with their appropriate result.

$y-intercept = 20$ $slope = 1$	
$y-intercept = 12$ $slope = 1$	
$y-intercept = 20$ $slope = 2$	
$y-intercept = 4$ $slope = 3$	

DRAG & DROP THE ANSWER

- $y = 4x + 3$
- $y = x + 20$
- $y = x + 12$
- $y = 2x + 20$
- $y = 3x + 4$

50 Write slope intercept form.

What letter represents slope?

What letter represents y-intercept?

51 **Write an equation of the line in point slope form $(y - y_1) = a(x - x_1)$ given that the slope is 5 and the line passes through (4, 2). Then convert it to slope-intercept form.**

Point-Slope Form:

Slope-Intercept Form: .

---

52 Part A

(a) Line q has a slope of $-\frac{8}{9}$. Another line r has the slope of $\frac{9}{8}$. Are line q and line r parallel or perpendicular ?

(A) Parallel

(B) Perpendicular

(C) Neither

(b)

Part B

A line q has a slope of -1. Line r is parallel to line q. What is the slope of line r ? Write your result in the empty box

provided below.

Slope of line r is

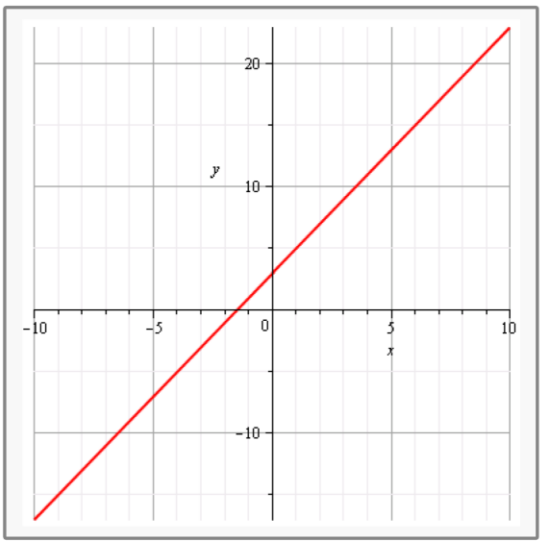
---

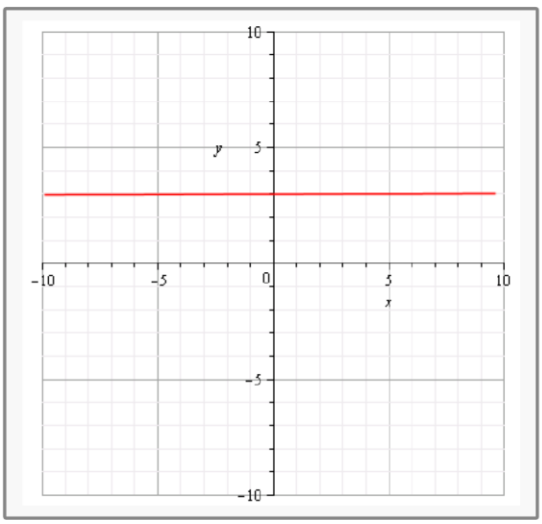
53 Write the equation of the line in point-slope form that has slope 3 and passes through $(2, -5)$.

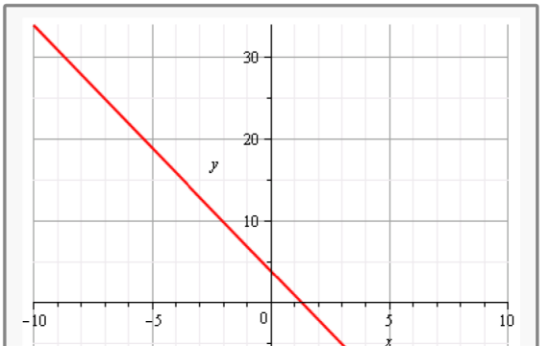
slope: $m = \dfrac{y_2 - y_1}{x_2 - x_1}$ Point-slope: $y - y_1 = m(x - x_1)$ Slope-intercept: $y = mx + b$

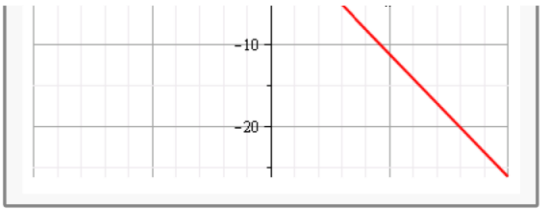
---

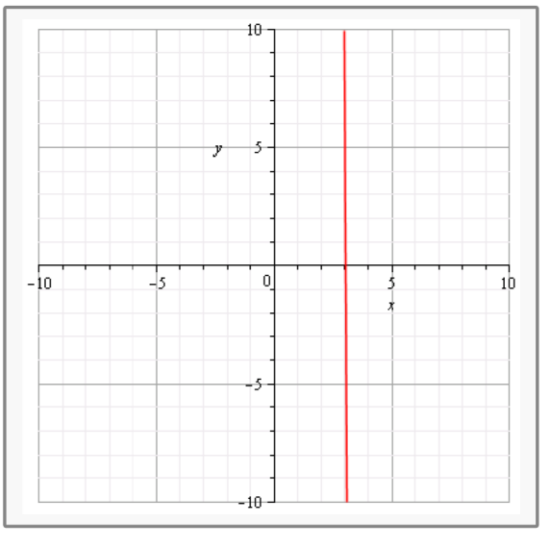
54 Consider the following graphs given below in the first column and identify whether these graphs have a positive slope, a negative slope, undefined slope or zero slope.











DRAG & DROP THE ANSWER

Positive slope

Zero slope

Undefined slope

Negative slope

---

55 Part A

(a)Choose the correct option:

The slope intercept form of an equation with slope (m) and y-

A intercept as (b) is $y = x + mb$ $y = mx + b$ $y = mx - b$

B None of the above

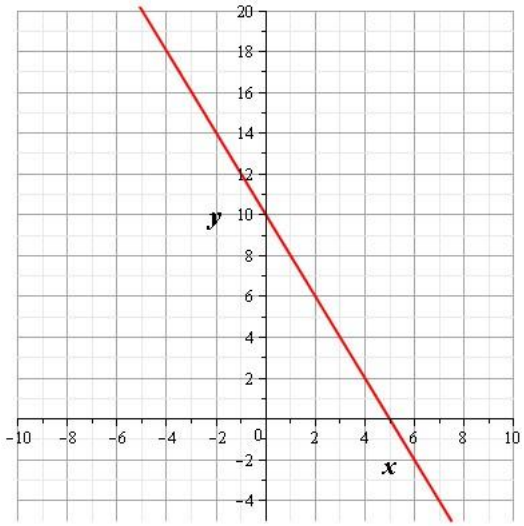
C

D

(b)

Part B

Using the following graph, determine the slope of the line,



The slope of the line is [ ] .

56 Match the equations of perpendicular lines. (You will not use all answer choices on the right.)

$y = \frac{1}{3}x + 4$	
$y = \frac{2}{5}x - 7$	
$y = -\frac{5}{2}x + 8$	
$y = -2x + 6$	
$y = \frac{7}{5}x - 9$	

DRAG & DROP THE ANSWER

- $y = \frac{5}{2}x - 7$
- $y = -\frac{5}{7}x - 11$
- $y = \frac{2}{5}x - 6$
- $y = \frac{5}{7}x - 6$
- $y = \frac{1}{2}x + 3$
- $y = -3x - 4$
- $y = -2x - 1$
- $y = -\frac{1}{3}x + 4$
- $y = -\frac{5}{2}x + 7$

---

57 What is the equation, in slope-intercept form, of the line parallel to $y = 5x + 2$ that passes through the point with coordinates $(-2, 1)$?

$y =$

58

Writing an Equation of a Perpendicular Line

A line passes through $(5,-9)$ and is perpendicular to the graph of $y = \frac{1}{3}x - 1$. What equation represents the line in slope-intercept form?

Step 2: Find the opposite reciprocal of the slope from Step 1.

$m =$

Step 3: Use slope-intercept form $y = mx + b$ to write the equation of the perpendicular line.

Step 1: Identify the slope of the graph of the given equation.

$m =$

59 Given the following information, write the equation of a perpendicular line in point-slope form and slope-intercept form.

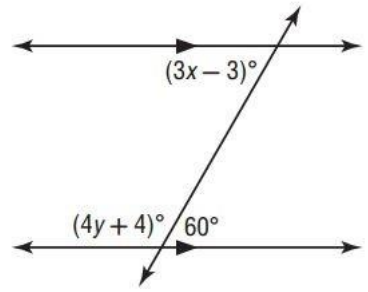
$\frac{1}{3}$

point-slope form:

slope-intercept form:

---

60 Find the measure of x and y (show all work):

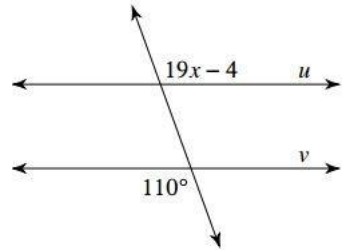


x =

y=

---

61 Find the value of x (show all work):



x =

---

62 The equation of a line is given.

$5x + 2y = 6$

$y = -x + 10$ and the perpendicular line that goes goes through the point (5, 2)

Allen graphs a line perpendicular to the given line.

What is the slope of Allen's line?

Determine whether each statement is always, sometimes, or never true.

---

63 $\overleftrightarrow{TQ}$ and $\overleftrightarrow{QT}$ are the same line.

(a) (A) Always

(B) Sometimes

(C) Never

(A) Always

(B) Sometimes

(b) (C) Never *JK* and *KJ* are the same ray.

(c) Intersecting lines are coplanar.

(A) Always

(B) Sometimes

(C) Never

(d) Four points are coplanar.

(A) Always

(B) Sometimes

(C) Never

(e) A plane containing two points of a line contains the entire line.

(A) Always

(B) Sometimes

(C) Never

(f) Two distinct lines intersect in more than one point.

(A) Always

(B) Sometimes

(C) Never

64 Use the distance formula below to answer the question:

Distance Formula

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

What is the distance between (7, -2) and (3,1)?

65 Use the distance formula to answer the question:

What is the distance between (5, 9), (−7, −7)?

66 Sam ran a distance represented by the expression $2x + 12$. Lee ran a distance represented by the expression $6x + 36$. Which describes how the distance that Lee ran compares to the distance that Sam ran?

(A) The distance that Lee ran is 2 times the distance that Sam ran.

(B) The distance that Lee ran is 3 times the distance that Sam ran.

(C) The distance that Lee ran is 4 times the distance that Sam ran.

(D) The distance that Lee ran is 6 times the distance that Sam ran.

67 What is the distance between the points $(2, 10)$ and $(-4, 2)$ in the $xy-$ plane?

(A) 6

(B) 8

(C) 10

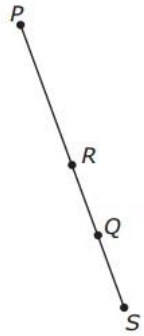
(D) 14

(E) 18

69 $\overline{AB}$ has endpoint $A(-2, 3)$ and midpoint $M(4, 6)$.

Find the coordinates (x, y) of B.

68 R is the midpoint of segment PS. Q is the midpoint of segment RS.



P is located at $(8,10)$, and S is located at $(12,^{-}6)$. What are the

(A) coordinates of Q ? $(4,2)$

( )

( )

(D)

B $(2,^{-}8)$

C $(11,^{-}2)$

$(10,2)$

70 If the coordinate of A is (0, -2) and the coordinate of B is (10, -6), the then midpoint of $\overline{AB}$ is:

(,)

Here is the midpoint formula:

$$\left(\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2}\right)$$

---

71 Create the equation of a circle that has a center at $(1, 3)$ and a radius of 4 units.

---

72 Part A

(a)

The equation of a circle C is $(x + 2)^2 + (y - 7)^2 = 36$. What is its center (h,k)?

A $(-2,-7)$

B $(-2,7)$

C $(2,-7)$

D $(2,7)$

(b)

Part B

What is the radius (r) of the circle C ?

Answer: $r =$ _____ .

---

73 Write an equation of a circle with a radius of 6 and a center at $(2, 3)$.

_____

---

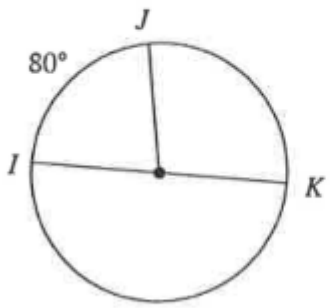
74 If the equation of a circle is $x^2 + y^2 = 64$, then the radius of the circle is _____ .

---

75 p.7 Central Angles and Inscribed Angles

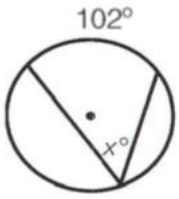
#4 What is the measure, in degrees, of arc $\overset{\frown}{JKI}$?

4) $m\overset{\frown}{JKI}$



$m\overset{\frown}{JKI} =$ _____ degrees

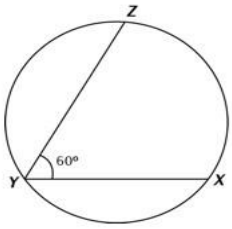
76 p.6 (back) Circles: Arc Measure, Central Angles and Inscribed Angles
#6 What is the value of x in the diagram?



$x =$ _____ degrees

---

77 Angle Y is inscribed in the circle below.



What is the measure of arc XZ?

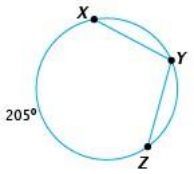
(A) 30°

(B) 60°

(C) 120°

(D) 300°

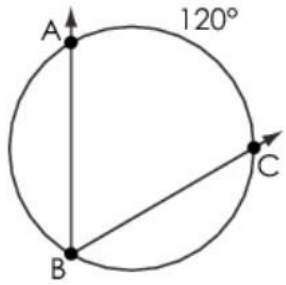
78 Angle Y is inscribed in the circle below. The measure of arc XZ is 205°.



What is the measure of angle Y ?

---

79 Angle ABC is inscribed in a circle as shown.



What is the measure ,in degrees, of ∠ABC?

degrees

---

80 Which statement about angles of a circle is true?

(A) An angle inscribed in a semicircle is a right angle.

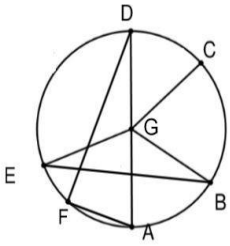
(B) A central angle has one half the measure of the arc it intercepts.

(C) An inscribed angle has the same measure as the arc it intercepts.

(D) An inscribed angle in which one of the sides is a diameter is obtuse.

---

81. Select all the central angles in circle G.



A. angle FDA B.

B. angle EGB C.

C. angle EGF D.

D. angle DAF E.

E. angle CGB F.

F. angle BEG

---

82 A circle has a radius of 10 cm. What is the area of the circle in terms of π?

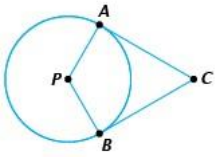
(A) 25π cm^2

(B) 100π cm^2

(C) 50π cm^2

---

83 $\angle ACB$ is a circumscribed angle of circle P. $m\angle ACB = 60^\circ$.

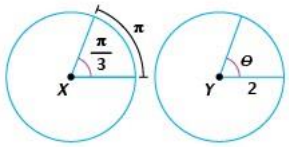


What is $m\angle APB$?

$^\circ$

---

84 Circle X has center X and circle Y has center Y . The measures of central angle and arc length of circle X, and the radius of circle Y are labeled below. Note that the gure is not drawn to scale. The sectors have equal areas.



Not drawn to scale

What is the central angle of circle Y ?

(A) 2π radians

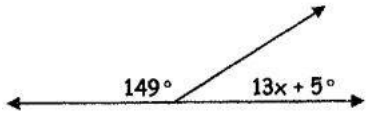
(B) $\frac{2\pi}{3}$ radians

(C) $\frac{3\pi}{2}$ radians

(D) $\frac{3\pi}{4}$ radians

---

85 Part A - Create an equation and solve for x:



x =

Part B - Find the measure of the unknown angle:

Unknown angle = degrees.

---

86 The sector of a circle has an area of $\frac{104\pi}{9}$ square inches and a central angle with measure 65°. What is the radius of the circle, in inches?

(A) 5.7

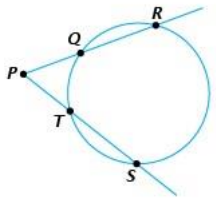
(B) 8

(C) 64

(D) 104

---

87. In the circle below, the measure of arc QT is 50° and the measure of angle P is 55°.



What is the measure of arc *RS*?

(A) 105°

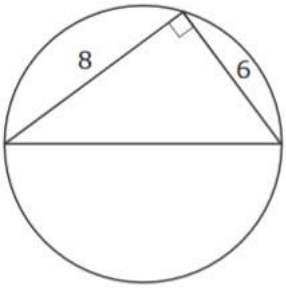
(B) 135°

(C) 160°

(D) 175°

---

88 This diagram shows a circle with an inscribed right triangle and some of its measurements, in units.



Based on the diagram, what is the circumference, in units, of the circle?

(A) 5π

(B) 10π

(C) 14π

(D) 25π

---

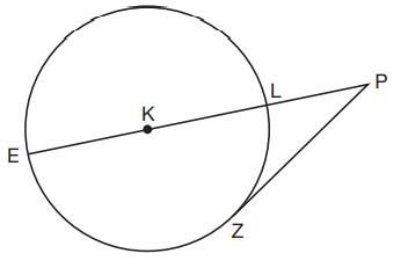
89 Identify each part of the circle given the equation .

$(x-6)^2+(y-9)^2=225$

Center :

Radius:

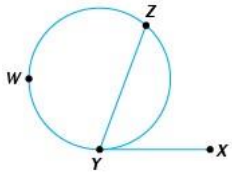
91 In the diagram below of circle K, secant $\overline{PLKE}$ and tangent $\overline{PZ}$ are drawn from external point P.



If $m\widehat{LZ} = 56°$, determine and state the degree measure of angle P.

---

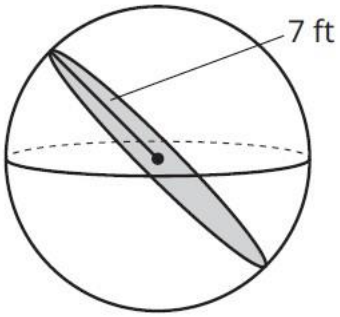
91 In the circle below, the measure of angle XYZ is 65°.



What is the measure of arc YWZ?

---

92 The shaded circle is a great circle. What is the diameter of the sphere?



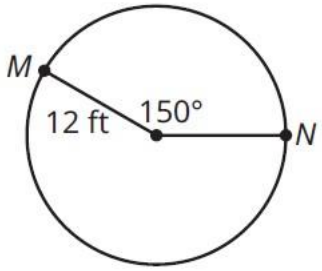
(A) 5 feet

(B) 7 feet

(C) 10 feet

(D) 14 feet

93. What is the arc length of $\overset{\frown}{MN}$? Round your answer to the nearest tenth(one decimal place)



94 A circle with center L contains points J and K. Circle L is dilated by a factor of 2, resulting in a new circle with center P. Points M and N are on circle P such that central angle MPN has the same measure as central angle JLK.

Which statement correctly identifies the relationship between the arc length of JK and the arc length of MN?

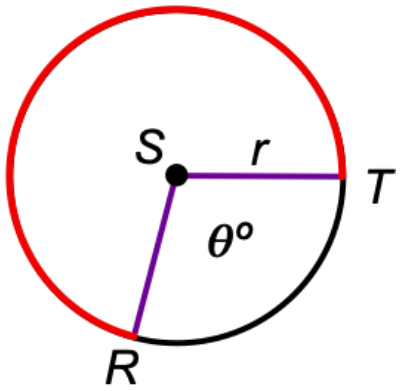
(A) The arc length of JK is half the arc length of MN.

(B) The arc length of MN is half the arc length of JK.

(C) The arc length of JK is a quarter of the arc length of MN.

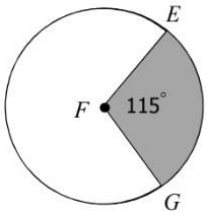
(D) The arc length of MN is a quarter of the arc length of JK.

95 Find the Radius if the arc length of $\overset{\frown}{RT} = 97$ meters and $\vartheta = 252°$. Round to the nearest tenth.



Use 3.14 for π.

96. If EF = 28 ft, nd the arc length and sector area of the shaded portion of the circle. Round your answers to the nearest tenth.

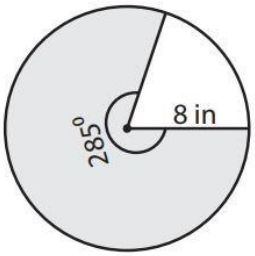


Arc Length = feet

Sector Area = square feet

97 Directions - Find the sector areas of both the grey and white areas:

*Use 3.14 in place of π



a) Sector area (grey) = a (round to two decimal places)

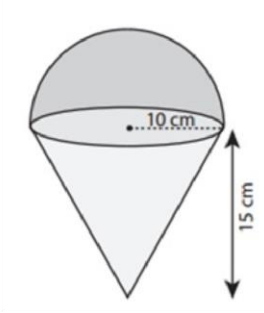
b) Sector area (white) = b (round to two decimal places)

a
- in
- in^2
- in^3

b
- in
- in^2
- in^3

98 Find the volume of each geometric solid in the gure below. Then determine the volume of the entire figure.

(Use $\pi \approx 3.14$, and round to the nearest hundredth.)



Volume of the cone: $V =$ [ ] a

Volume of the hemisphere: $V =$ [ ] b

Volume of the entire figure: $V =$ [ ] c

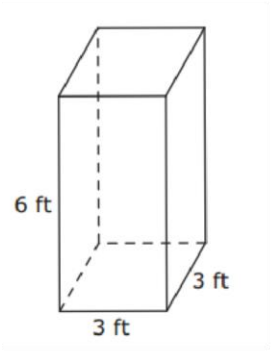
a
- centimeters
- square centimeters
- cubic centimeters

b
- centimeters
- square centimeters
- cubic centimeters

c
- centimeters
- square centimeters
- cubic centimeters

---

99 What is the volume a of the figure below?



(A) $12\ \text{ft}^2$

(B) $36\ \text{ft}^2$

(C) $54\ \text{ft}^2$

(D) $90\ \text{ft}^2$

100 The volume of a sphere is $2,400$ cubic centimeters. What is the **approximate** diameter of this sphere?

(Volume of a sphere $= \frac{4}{3}\pi r^3$)

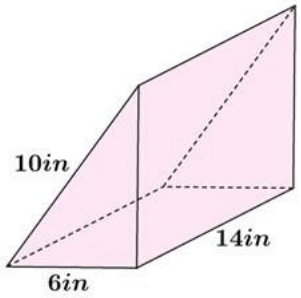
(A) 16.6 cm

(B) 10.1 cm

(C) 8.3 cm

(D) 4.2 cm

Find the volume of the triangular prism below.

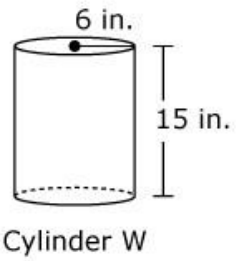


$V =$ ____ in^3

---

102 Circular cylinder W and some of its dimensions are shown in this diagram.

a)



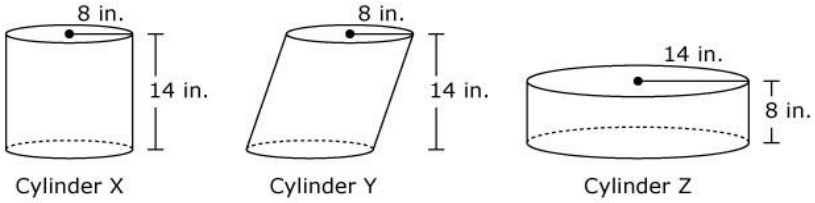
Cylinder W

What is the volume, to the nearest cubic inch, of cylinder W?

Enter your answer in the space provided. Enter only your answer.

____ cubic inches

(b) This diagram shows circular cylinders X,Y , and Z and the measures of their heights and radii.



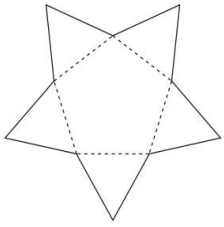
Compare the volumes of cylinders X,Y , and Z.

The volume of cylinder Y is_____the volume of cylinder X, and the volume of cylinder Z is_____ the volume of X.

103 Choose all sets of real numbers each belongs to.

	Real	Rational	Irrational	Integer	Whole	Natural
$-\frac{1}{3}$	☐	☐	☐	☐	☐	☐
$\sqrt{2}$	☐	☐	☐	☐	☐	☐
-4	☐	☐	☐	☐	☐	☐
$\sqrt{25}$	☐	☐	☐	☐	☐	☐
$64^{\frac{1}{3}}$	☐	☐	☐	☐	☐	☐

104 The net shown below can be folded along the dashed line segments to form a three-dimensional f i gure.



Which gure is best represented by this net?

(A) Hexagonal prism

(B) Hexagonal pyramid

(C) Pentagonal prism

(D) Pentagonal pyramid

105 The probability that event A occurs is $\frac{5}{7}$ and the probability that event B occurs is $\frac{2}{3}$. If A and B are independent events, what is the probability that A and B both occur? Write your result in the empty box provided below in a simplest fraction form.

P(A and B) = [ ] .

Note: Use slash (/) to separate numerator and denominator.

106 Two fair coins are ipped at the same time. What is the probability that both display tails?

(A) $\frac{1}{8}$

(B) $\frac{1}{4}$

(C) $\frac{1}{3}$

(D) $\frac{1}{2}$

107. Probabilities for two events, event *A* and event *B*, are given.

$P(A \text{ and } B) = 0.14$

$P(B) = 0.4$

What is the probability of A given B?

108 For two mutually exclusive events, A and B, $P(A) = \frac{5}{10}$ and $P(B) = \frac{1}{10}$.

What is the probability that either event A or event B occurs?

(A) 0.8

(B) 0.6

(C) 0.5

(D) 0.4

109 At Kennedy Middle School, the probability that a student takes Technology and Spanish is 0.087. The probability that a student takes Technology is 0.68. What is the probability that a student takes Spanish given that the student is taking Technology?

Type your result in the empty box provided below in decimal form rounded to the hundredth place.