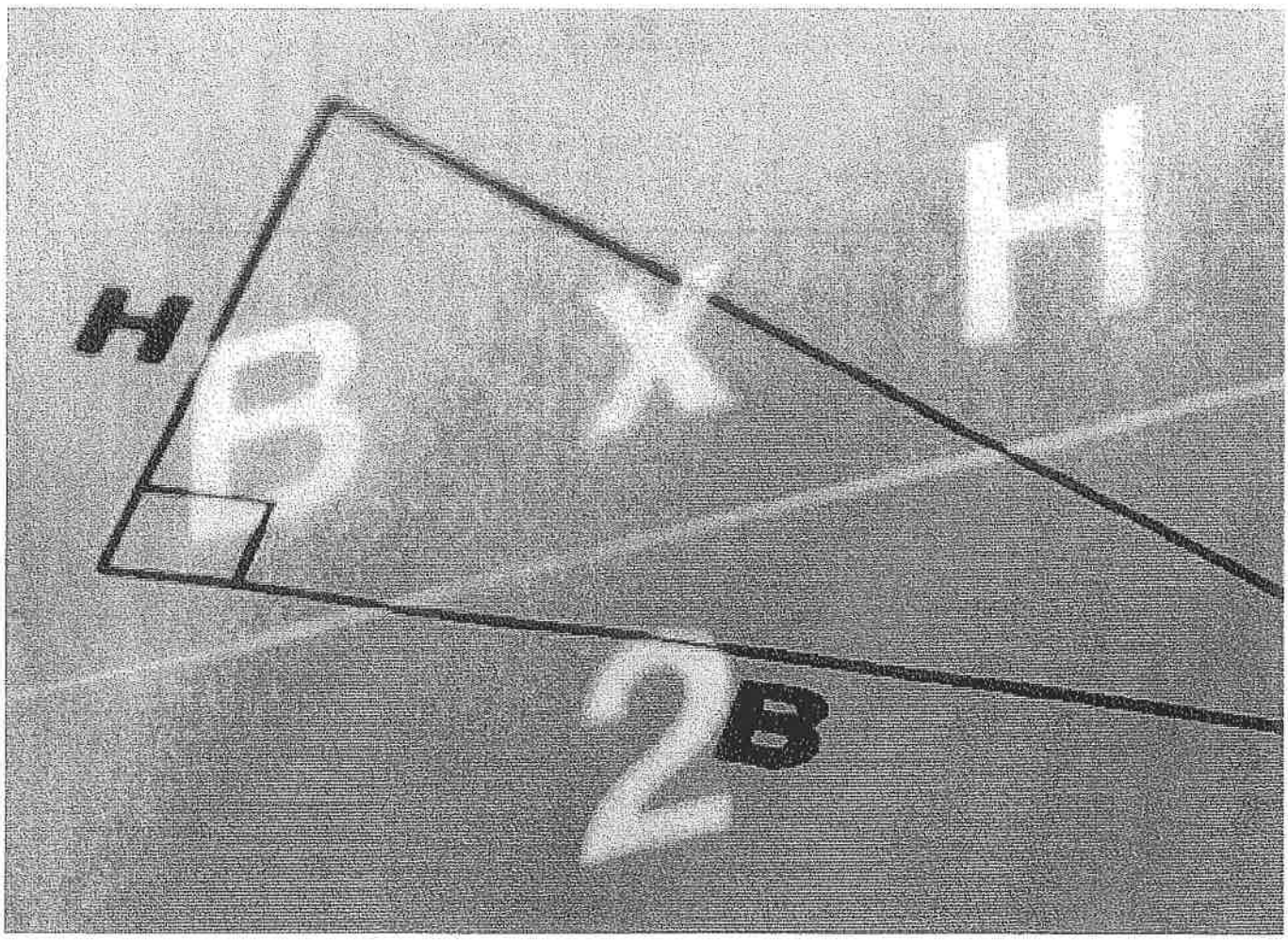
ALLEN PARK HIGH SCHOOL

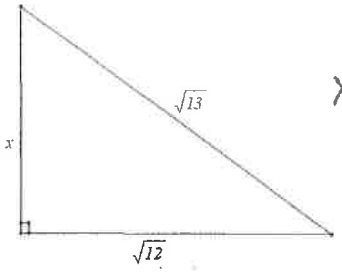
Second Semester Review



Geometry

APHS/MATH

1 The unit measures of the sides of a right triangle are shown below. Find the exact measure of x.



A. 0.84

B. 1

C. 5

D. 25

$x^2 + (\sqrt{12})^2 = (\sqrt{13})^2$

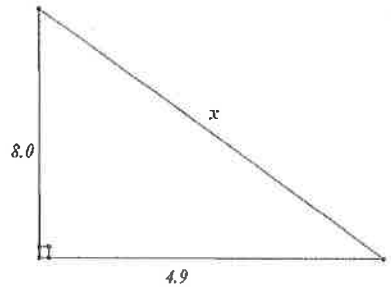
$x^2 + 12 = 13$

$-12 \quad -12$

$\sqrt{x^2} = \sqrt{1}$

$x = 1$

2 The unit measures of the sides of a right triangle are shown below. Find the measure of the hypotenuse. Round to the nearest tenth.



A. 89.0

B. 9.3

C. 88.1

D. 9.4

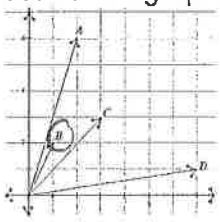
$(4.9)^2 + (8)^2 = x^2$

$24.01 + 64 = x^2$

$\sqrt{88.01} = \sqrt{x^2}$

$9.4 = x$

3 Four vectors are graphed on the coordinate grid below.



Which vector is the result when the vectors $\langle 0, 2 \rangle$ and $\langle 1, 0 \rangle$ are added?

A. A

B. B

C. C

D. D

$\langle 0+1, 2+0 \rangle$

$\langle 1, 2 \rangle$

4 Find the magnitude of $\overline{m} = \langle 5, 1 \rangle$.

A. $\sqrt{26}$

B. 5

C. 1

D. $\sqrt{51}$

$5^2 + 1^2 = v^2$

$\sqrt{25+1} = \sqrt{v^2}$

$\sqrt{26} = v$

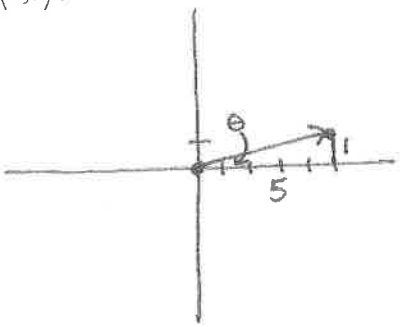
5 Find the direction of $\overline{m} = \langle 5,1 \rangle$.

A. 101°

B. 191°

C. 11°

D. 349°



$\theta = \tan^{-1}\left(\frac{1}{5}\right)$

$\theta = 11.3°$

6 Consider the following statement.
"Regular polygons are convex."
Which is the converse of the given statement?

A. Regular polygons are not convex.

B. Polygons that are not regular are not convex.

C. If polygons are regular, then they are convex.

D. Convex polygons are regular.

7 Consider the following statement.
"Regular polygons are convex."
Which is the negation of the given statement?

A. Regular polygons are not convex.

B. Polygons that are not regular are not convex.

C. If polygons are regular, then they are convex.

D. Convex polygons are regular.

8 In the figure below, $m\angle QRT = 82°$. In ΔRST, $\angle T$ is 6° greater than $\angle S$.

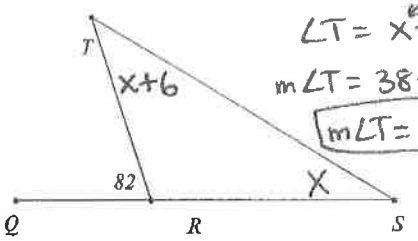
What is the measure of $\angle T$?

A. 38°

B. 52°

C. 44°

D. 46°



$\angle S = x$

$\angle T = x + 6$

$m\angle T = 38 + 6$

$m\angle T = 44$

EXTERIOR ∠ TH.

$x + 6 + x = 82$

$2x + 6 = 82$

$-6 \quad -6$

$\frac{2x}{2} = \frac{76}{2}$

$x = 38$

9 A circle has a diameter of 9 cm. What is the exact value of the area of this circle?

A. 20.25π

B. 18π

C. 81π

D. 9π

$A = \pi r^2$ $\quad r = 4.5$

$A = \pi(4.5)^2$

$A = 20.25\pi$

10 A circle has an area of 144π. What is the exact value of the circumference of this circle?

A. 24

B. 12π

C. 24π

D. 12

$A = \pi r^2$

$\frac{144\pi}{\pi} = \frac{\pi r^2}{\pi}$

$\sqrt{144} = \sqrt{r^2}$

$12 = r$

$C = 2\pi r$

$C = 2\pi(12)$

$C = 24\pi$

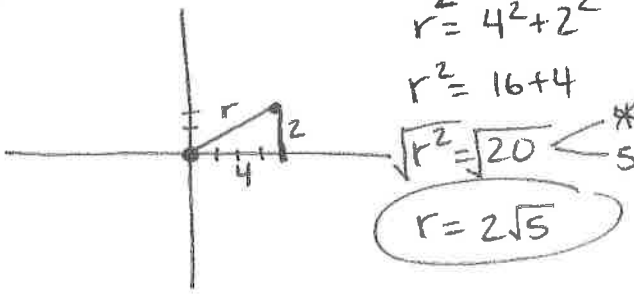
11 A circle has its center at the origin and one point on the circle is (4, 2). What is the measure of the radius of this circle?

A. 20

B. $2\sqrt{5}$

C. $2\sqrt{3}$

D. 24



$r^2 = 4^2 + 2^2$

$r^2 = 16 + 4$

$\sqrt{r^2} = \sqrt{20}$

$r = 2\sqrt{5}$

12 In the figure, $\overline{XP}$ and $\overline{XT}$ are opposite rays. → means is a straight ∠, which equals 180°.

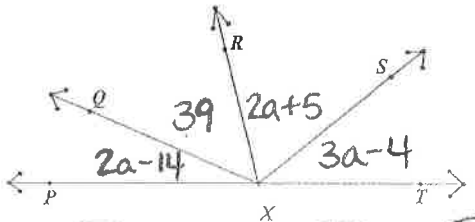
If $m\angle PXQ = 2a - 14$, $m\angle QXR = 39°$, $m\angle RXS = 2a + 5$, and $m\angle SXT = 3a - 4$, find $m\angle RXS$.

A. 22°

B. 30°

C. 49°

D. 62°



$(2a) - 14 + 39 + (2a) + 5 + (3a) - 4 = 180$

$7a + 26 = 180$

$-26 \quad -26$

$\frac{7a}{7} = \frac{154}{7}$

$a = 22$

$m\angle RXS = 2a + 5$

$= 2(22) + 5$

$= 49°$

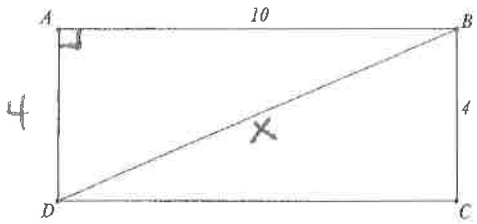
13 What is the exact length of the diagonal in the rectangle represented by the drawing below?

A. 20

B. 40

C. 14

D. $2\sqrt{29}$



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

$16+100=x^2$

$\sqrt{116}=\sqrt{x^2}$

$4\sqrt{29}$

22

$x=2\sqrt{29}$

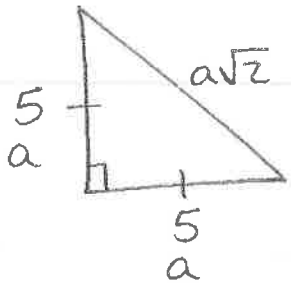
14 An isosceles right triangle has legs 5 in long. What is the length of the hypotenuse of this right triangle?

A. $5\sqrt{2}$

B. $5\sqrt{3}$

C. $10\sqrt{2}$

D. $10\sqrt{3}$



45-45-90

hypotenuse = $5\sqrt{2}$

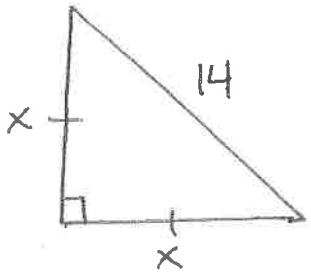
15 An isosceles right triangle has a hypotenuse of 14 cm long. What is the length of each leg?

A. 7

B. $7\sqrt{2}$

C. 14

D. $14\sqrt{2}$



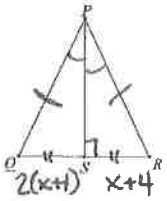
$x^2+x^2=14^2$

$\frac{2x^2}{2}=\frac{196}{2}$

$\sqrt{x^2}=\sqrt{98}$ 2 49 7 7

$x=7\sqrt{2}$

16 In ΔPQR below, $\overline{PQ} \cong \overline{PR}$ and $\overline{PS}$ bisects $\angle QPR$.



If the length of $\overline{QS}$ is $2(x+1)$ units and $\overline{SR}$ is $x+4$ units, what is the value of $\overline{QR}$?

A. 2

B. 6

C. 12

D. 14

$2(x+1)=x+4$

$2x+2=x+4$

$-x \quad -x$

$x+2=4$

$-2 \quad -2$

$x=2$

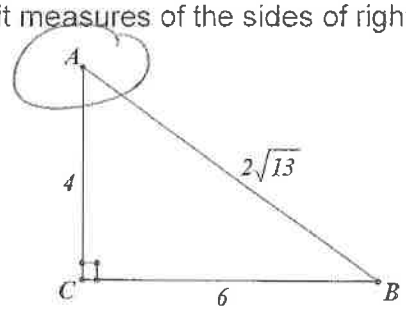
$QR=2(x+1)+x+4$

$QR=2(2+1)+2+4$

$QR=2(3)+6$

$QR=12$

17 The unit measures of the sides of right ΔABC are shown below.



Which ratio represents the tangent of $\angle A$?

reduce

$\tan A = \frac{6}{4} = \frac{3}{2}$

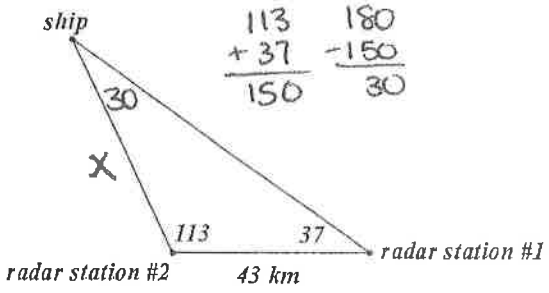
A. $\frac{2}{3}$

B. $\frac{3}{2}$

C. $\frac{12}{\sqrt{13}}$

D. $\frac{3\sqrt{13}}{13}$

18 A ship is sighted from two radar stations 43 km apart. The angle between the line segment joining the two stations ad the radar beam of the first station is $37°$. The angle between the line segment joining the two stations and the beam form the second station is $113°$.



$113 + 37 = 150$ $\quad 180 - 150 = 30$

Law of Sines

$\frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}$

$\frac{\sin(30)}{43} = \frac{\sin(37)}{x}$

$x = \frac{\sin(37) \cdot 43}{\sin(30)}$

$x = 51.8$ Km

How far is the ship from the second station?

A. 43.0 km

B. 51.8 km

C. 30.0 km

D. 62.3 km

19 What is the exact value for the sine of a $30°$ angle?

Calculator

A. $\frac{1}{2}$

B. $\frac{\sqrt{3}}{3}$

C. $\frac{\sqrt{3}}{2}$

D. $\frac{2\sqrt{3}}{3}$

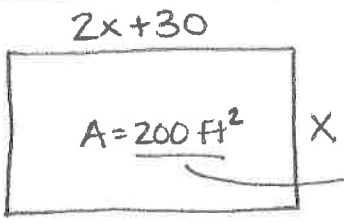
20 The length of a rectangular garden is 30 ft more than 2 times its width. The area of the garden is $200\,ft^2$. What is the length of the garden?

A. 40

B. 110

C. $3\sqrt{15}$

D. 5



$A = bh$

$A = x(2x+30)$

$A = 2x^2 + 30x$

$200 = 2x^2 + 30x$

$-200 \quad -200$

Factor → $0 = 2x^2 + 30x - 200$

$0 = 2(x^2 + 15x - 100)$

-100

$-5 \quad 20$

$0 = 2(x-5)(x+20)$

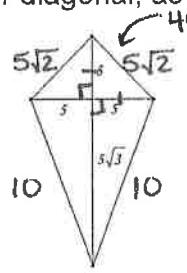
$x = 5, -20$

$l = 2x + 30$

$l = 2(5) + 30$

$l = 40$ ft

21 The diagonals of a kite are 10 units and $5+5\sqrt{3}$ units long. The longer diagonal bisects the shorter diagonal, as shown in the diagram.



$5^2 + (5\sqrt{3})^2 = x^2$

$25 + (25 \cdot 3) = x^2$

$\sqrt{25+75} = \sqrt{x^2}$

$10 = x$

$10 + 10 + 5\sqrt{2} + 5\sqrt{2}$

$20 + 10\sqrt{2}$

What is the perimeter of the kite?

A. $15+10\sqrt{6}$

B. $15+5\sqrt{3}$

C. $10+10\sqrt{3}$

D. $20+10\sqrt{2}$

22 Which of the following properties is **NOT** always true for a rectangle?

A. All sides are congruent.

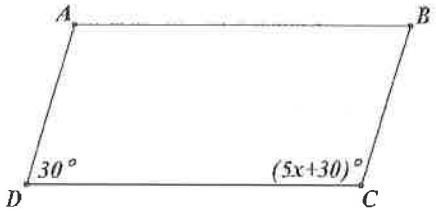
B. Opposite sides are parallel.

C. The diagonals are congruent.

D. The sum of the interior angles is 360°.

23 In the diagram below, *ABCD* is a parallelogram.

Find the value of *x*.



$30+5x+30=180$

$5x+60=180$

$-60 \quad -60$

$\frac{5x}{5}=\frac{120}{5}$

$x=24$

A. 0

B. 12

C. 24

D. 36

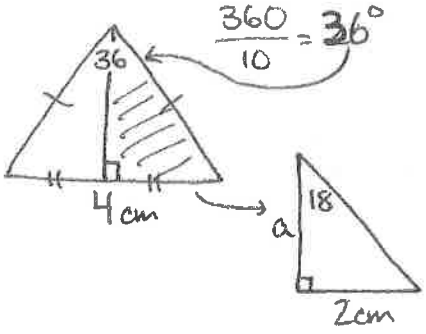
24 A regular decagon has 4 cm sides. Which is the closest to the area of this decagon?

A. 120 square cm

B. 123 square cm

C. 128 square cm

D. 132 square cm



$\frac{360}{10}=36°$

$A=\frac{1}{2}sar$

$\frac{\tan(18)}{1}=\frac{2}{a}$

$a=\frac{2}{\tan(18)}$

$a=6.15$

$A=\frac{1}{2}(4)(6.15)(10)$

$A=123\text{ cm}$

25 Two regular octagons share a common side, as shown in the diagram below.

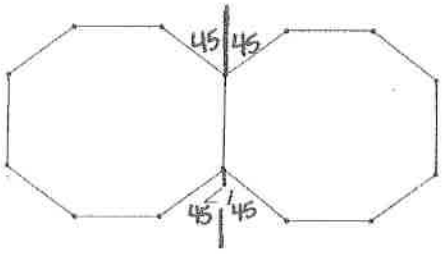
What is the measure of $\angle 1$ in the diagram?

A. 88°

B. 90°

C. 45°

D. 60°



★ one exterior $\angle = \frac{360}{n}$

$\frac{360}{8}=45$

$m\angle 1=45+45$

$m\angle 1=90°$

26 A square is inscribed in a circle shown below.

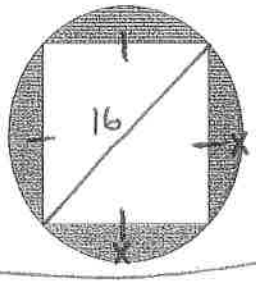
If the diagonal of the square measures 16 inches, what is the area of the shaded part of the circle?

A. $(64\pi - 128)$ square inches

B. $(128 - 64\pi)$ square inches

C. 256 square inches

D. 128 square inches



$x^2 + x^2 = 16^2$

$\frac{2x^2}{2} = \frac{256}{2}$

$x^2 = 128$

$A = O - \square$

$A = \pi r^2 - bh$

$\pi(8)^2 - x(x)$

$64\pi - x^2$

$64\pi - 128$

27 Chord $\overline{AB}$ passes through the center of circle C, and chord $\overline{DE}$ is perpendicular to $\overline{AB}$ at point F. The diameter of the circle is 10 in, and the length of $\overline{FE}$ is 3 in.

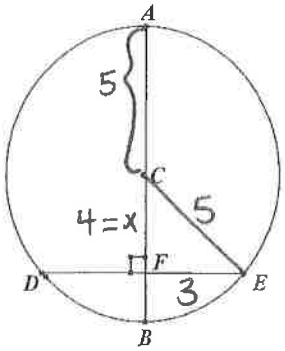
What is the length of $\overline{AF}$?

A. 4

B. 6

C. 8

D. 9



28 In the diagram below, A, B, and C are on circle P.

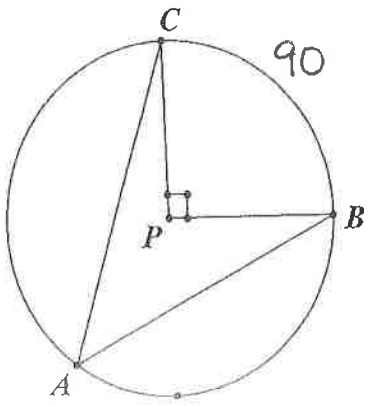
Find the $m\angle CAB$.

A. 45°

B. 90°

C. 135°

D. 180°



$\angle A$ is inscribed

$m\angle A = \frac{1}{2}(m\overset{\frown}{CB})$

$m\angle A = \frac{1}{2}(90)$

$m\angle A = 45$

29 Points A and B are on circle C, as shown in the diagram below. The length of the hypotenuse of ΔABC is $8\sqrt{2}$ inches.

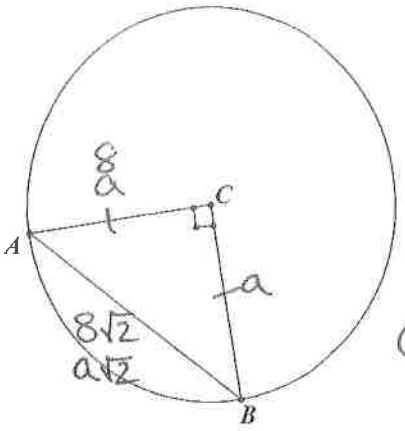
What are the circumference and area of circle C?

A. Circumference = 16π inches
Area = 64π square inches

B. Circumference = $8\sqrt{2}\pi$ inches
Area = 128π square inches

C. Circumference = $16\sqrt{2}\pi$ inches
Area = 128π square inches

D. Circumference = 8π inches
Area = 256π square inches



45-45-90

$a = 8$

$A = \pi r^2 = \pi(8)^2$

$A = 64\pi$

$C = 2\pi r = 2\pi(8)$

$C = 16\pi$

30 In parallelogram ABCD below, the length of $\overline{AC}$ is 8 units long and the length of $\overline{EB}$ is 6 units long.

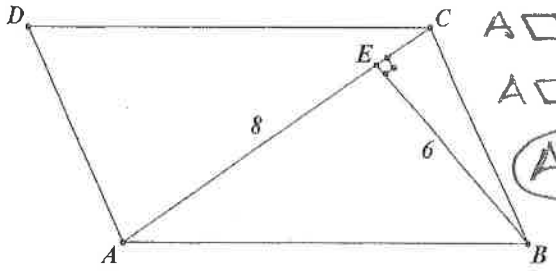
What is the area, in square units if ABCD?

A. 48 square units

B. 24 square units

C. 14 square units

D. Not enough information



$A_{\square} = 2A_{\triangle}$

$A_{\square} = 2\left(\frac{1}{2}bh\right)$

$A_{\square} = 2\left(\frac{1}{2}(8)(6)\right)$

$A_{\square} = 48$

31 The unit lengths of the sides of isosceles trapezoid ABCD are shown below.

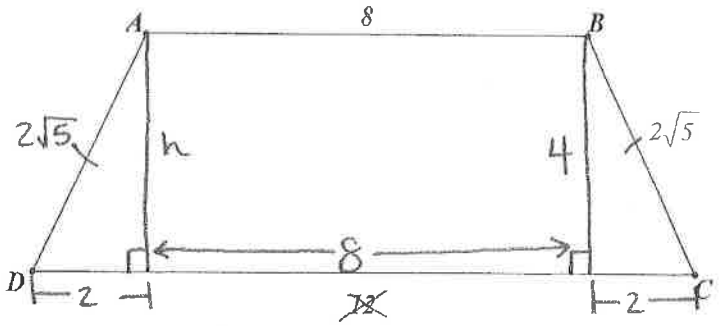
Which expression shows the square unit area of the trapezoid as the sum of the areas of a rectangle and two triangles?

A. $(4 \bullet 8) + (4 \bullet 2)$

B. $(8 \bullet 12) + (2 \bullet 2\sqrt{5})$

C. $(4 \bullet 8) + (2 \bullet 2\sqrt{5})$

D. $(8 \bullet 12) + (2 \bullet 4)$



$2^2 + h^2 = (2\sqrt{5})^2$

$4 + h^2 = (4 \cdot 5)$

$4 + h^2 = 20$

$-4 \quad -4$

$\sqrt{h^2} = \sqrt{16}$

$h = 4$

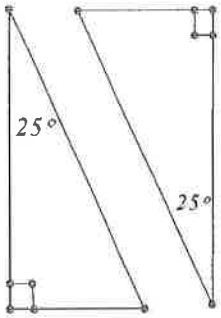
$\square + 2\triangle$

$bh + 2\left(\frac{1}{2}bh\right)$

$(8 \cdot 4) + 2\left(\frac{1}{2}(4)(2)\right)$

$(8 \cdot 4) + (4 \cdot 2)$

32 Determine whether the pair of triangle is similar by the given information. Explain your answer.



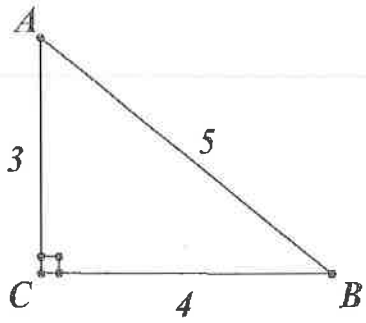
A. Not similar

B. Yes, SAS~

C. Yes, AA~

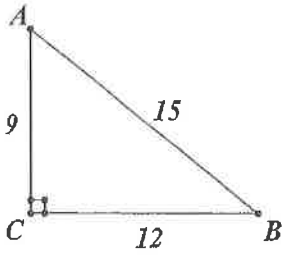
D. Yes, SSS~

33

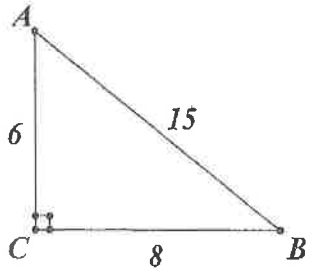


Which of the triangles is similar to the triangle above?

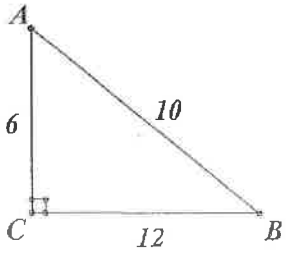
A.



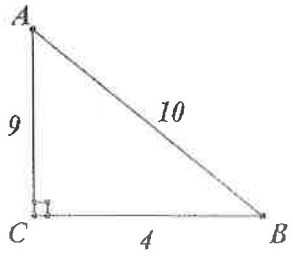
B.



C.

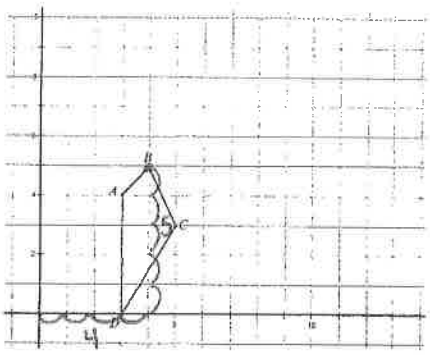


D.



34 The vertices of quadrilateral ABCD are A (3, 4), B (4, 5), C (5, 3), and D (3, 0). A transformation of quadrilateral ABCD to quadrilateral $A'B'C'D'$ is defined as $T(x, y) = (x+5, y+3)$.

$(x,y) \rightarrow (x+5, y+3)$



$B(4,5) \rightarrow B'(9,8)$

After this transformation, B' is the image of B. What are the coordinates of B'?

A. (4, 5)

B. (5, 3)

C. (10, 6)

D. (9, 8)

35 Gus reflects an object twice. The first step is to reflect it over the line $y = -1$. Then Gus completes the composite reflection by reflecting it over the line $y = 1$. The net effect is a translation of the object. Describe this translation.

A. $(x, y) \rightarrow (x, y)$

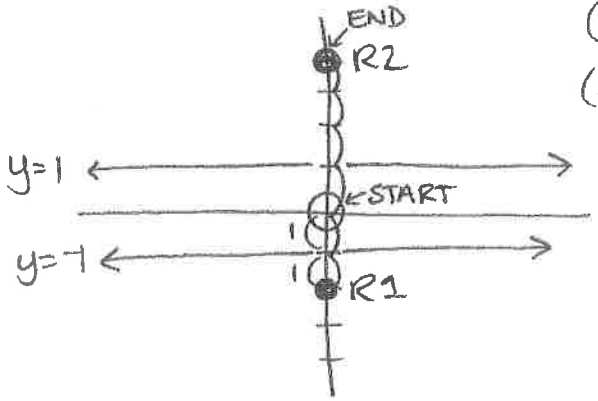
B. $(x, y) \rightarrow (x+4, y)$

C. $(x, y) \rightarrow (x, y-4)$

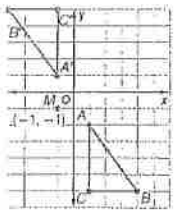
D. $(x, y) \rightarrow (x, y+4)$

$(x,y) \rightarrow (x, y+4)$

$(0,0) \rightarrow (0,4)$



36 A transformation maps ΔABC to $\Delta A'B'C'$, as shown on the coordinate grid below.



misdrawn

Which of the following best describes this transformation?

A. reflection

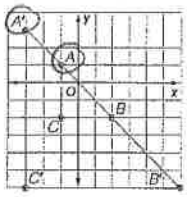
B. translation

C. rotation

D. dilation

★ If drawn correctly would be either a reflection about the origin or a rotation of 180°.

37 In the coordinate grid below, ΔABC is transformed to $\Delta A'B'C'$



What is the scale factor for this dilation?

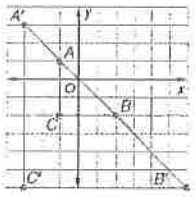
A. $\frac{1}{3}$; reduction

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

C. 3; reduction

D. 3; enlargement

38 ΔABC and its image $\Delta A'B'C'$ are shown on the coordinate grid below.



Which best represents the mapping (T) from ΔABC onto $\Delta A'B'C'$?

A. $T:(x,y)\rightarrow(x-2,y+2)$

B. $T:(x,y)\rightarrow(x+2,y-2)$

C. $T:(x,y)\rightarrow\left(\frac{x}{3},\frac{y}{3}\right)$

D. $T:(x,y)\rightarrow(3x,3y)$

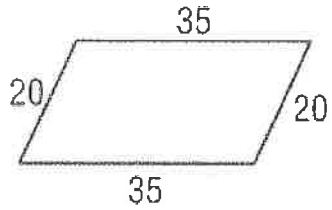
39 Determine whether the quadrilateral is a parallelogram. Justify your answer.

A. No, the sides don't add up to 180°

B. No, all sides are not equal

C. Yes, the opposite sides are equal

D. Yes, the opposite sides are parallel



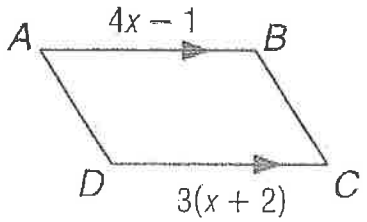
40 Find x so that the quadrilateral is a parallelogram.

A. 3

B. 7

C. 25

D. 13



$4x-1=3(x+2)$
$4x-1=3x+6$
$-3x \quad -3x$
$x-1=6$
$+1 \quad +1$
$x=7$

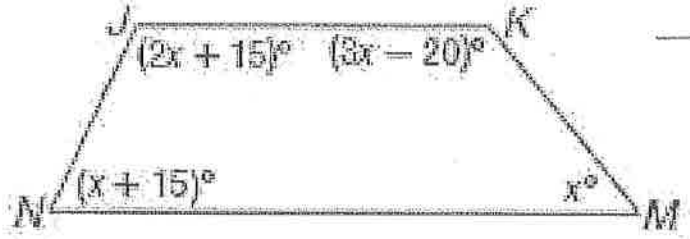
41 Find the measure of $\angle K$ in the quadrilateral below.

A. 50°

B. 115°

C. 130°

D. 65°



$7x+10=360$
$-10 \quad -10$
$\frac{7x}{7}=\frac{350}{7}$
$x=50$
$m\angle 2=3x-20$
$=3(50)-20$
$=150-20$
$m\angle K=130°$

42 Find the sum of the measures of the exterior angles of a regular dodecagon.

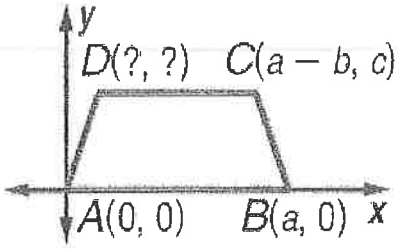
A. 1800°

B. 150°

C. 360°

D. 30°

43 Name the missing coordinates for the isosceles trapezoid.



A. (1, 3)

B. (c, b)

C. (a + d, c)

D. (b, c)

44 The ratio of the measures of three angles of a triangle are 5:7:8. Find the measure of each angle of the triangle.

$5x + 7x + 8x = 180$

$\frac{20x}{20} = \frac{180}{20}$

$x = 9$

$5x = 5(9) = 45°$

$7x = 7(9) = 63°$

$8x = 8(9) = 72°$

A. 9, 11, 12

B. 45, 63, 72

C. 30, 58, 92

D. Not enough information

45 The span of the Benjamin Franklin suspension bridge in Philadelphia, Pennsylvania, is 1750 feet. A model of the bridge has a span of 42 inches. What is the ratio of the span of the model to the span of the actual Benjamin Franklin Bridge?

Convert Feet to inches

$1750(12) = 21{,}000$

$\frac{\text{model}}{\text{actual}} = \frac{42}{21{,}000} = \frac{1}{500}$ or 0.002

A. $\frac{1}{500} = 0.002$

B. $\frac{3}{125} = 0.024$

C. $\frac{36}{125} = 0.288$

D. $\frac{7}{1500} = 0.0047$

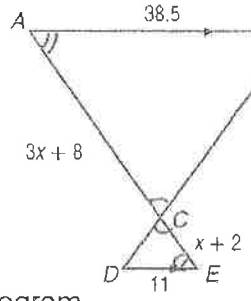
46 Determine whether the two triangles are similar. If so, calculate the length of $\overline{AC}$.

A. The triangles are not similar.

B. The triangles are similar and AC = 4

C. The triangles are similar and AC = 2

D. The triangles are similar and AC = 14



similar △s by AA~

$\frac{38.5}{11} = \frac{3x+8}{x+2}$

$33x+88 = 38.5x+77$

$-77 \quad -77$

$33x+11 = 38.5x$

$-33x \quad -33x$

$\frac{11}{5.5} = \frac{5.5x}{5.5}$

$2 = x$

$AC = 3x+8$

$AC = 14$

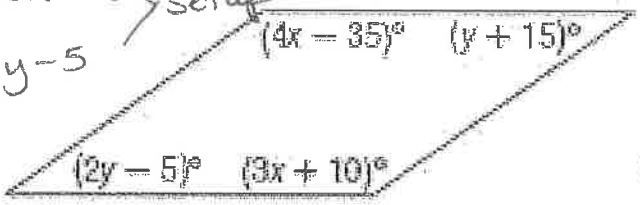
47 Find x and y so that the quadrilateral is a parallelogram.

A. x = 45, y = 20

B. x = 6, y = 63

C. x = 7, y = 3

D. x = 6, y = 14



$4x-35 = 3x+10$ setup

$y+15 = 2y-5$

48 Determine which set of numbers can be the measures of the sides of a right triangle.

A. 3, 4, 6

B. $\sqrt{2}$, 2, 3

C. 8, 9, 10

D. $4\sqrt{3}$, 4, 8

$a^2+b^2=c^2$

$8^2+9^2=10^2$

$64+81=100$

$145=100$ X

$4\sqrt{3}=6.93$

$(4\sqrt{3})^2+4^2=8^2$

$(16\cdot3)+16=64$

$48+16=64$

$64=64$ ✓

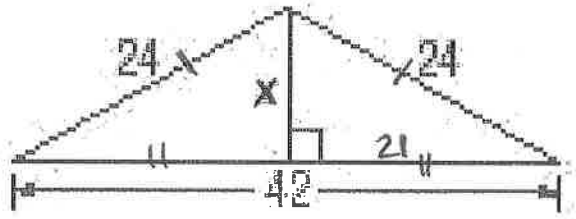
49 Calculate the value of x.

A. $4\sqrt{11}$

B. $5\sqrt{27}$

C. $3\sqrt{15}$

D. 13



$21^2+x^2=24^2$

$441+x^2=576$

$-441 \quad -441$

$\sqrt{x^2}=\sqrt{135}$ $5 < 27 < 3$ ✗ $(\frac{3}{3})$

$x = 3\sqrt{5\cdot3}$

$x = 3\sqrt{15}$

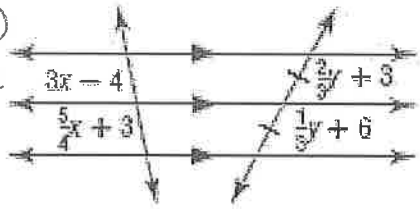
50 Use the figure below to determine the values of x and y.

A. x = 4, y = 9

B. x = 6, y = 6.5

C. x = 5, y = 7

D. x = 3, y = 8



$4(3x-4 = \frac{5}{4}x+3)$

$12x-16 = 5x+12$

$-5x \quad -5x$

$7x-16 = 12$

$+16 \quad +16$

$\frac{7x}{7} = \frac{28}{7}$

$x = 4$

$3(\frac{2}{3}y+3 = \frac{1}{3}y+6)$

$2y+9 = y+18$

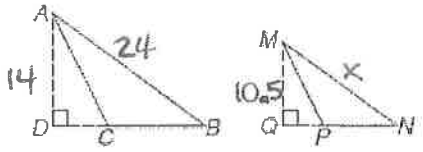
$-y \quad -y$

$y+9 = 18$

$-9 \quad -9$

$y = 9$

51 Find MN if $\Delta ABC \sim \Delta MNP$, $\overline{AD}$ is an altitude of ΔABC, $\overline{MQ}$ is an altitude of ΔMNP, $AB = 24$, $AD = 14$, and $MQ = 10.5$.



A. 24

B. 32

C. 6.125

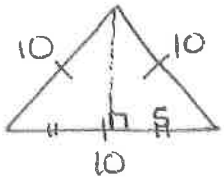
D. 18

$\frac{24}{x} = \frac{14}{10.5}$

$\frac{14x}{14} = \frac{252}{14}$

$x = 18$

52 The perimeter of an equilateral triangle is 30 centimeters. Find the length of an altitude of the triangle.



A. $5\sqrt{3}$

B. 5

C. 10

D. $5\sqrt{2}$

$P = 30$

$5^2 + x^2 = 10^2$

$25 + x^2 = 100$

$-25 \quad -25$

$\sqrt{x^2} = \sqrt{75}$

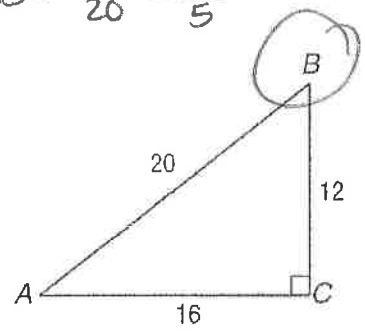
$\frac{25}{5} = 5$, $\sqrt{75} = 5\sqrt{3}$

$x = 5\sqrt{3}$

53 Find $\cos B$.

SohCahToa

$\cos B = \frac{12}{20} = \frac{3}{5}$ ← Reduce



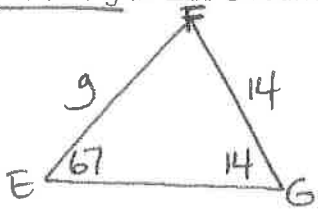
A. $\frac{3}{4}$

B. $\frac{3}{5}$

C. $\frac{4}{5}$

D. $\frac{4}{3}$

54 Find the measure of side g in ΔEFG rounded to the nearest tenth if $m\angle G = 14$, $m\angle E = 67$, and $e = 14$.



A. 4.1

B. 5.2

C. 3.7

D. 3.3

Law of Sines

$\frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}$

$\frac{\sin(67)}{14} = \frac{\sin(14)}{g}$

$g = \frac{\sin(14) \cdot 14}{\sin(67)}$

$g = 3.7$

55 Calculate the measure of side c in ΔABC rounded to the nearest tenth.

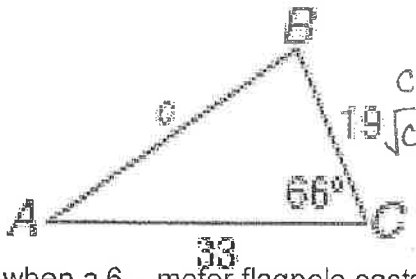
Law of Cosines
$c^2 = a^2 + b^2 - 2ab\cos C$

A. 25.8

B. 27.9

C. 30.7

D. 32.3



$c^2 = 19^2 + 33^2 - 2(19)(33)\cos(66)$

$\sqrt{c^2} = \sqrt{939.952}$

$c = 30.7$

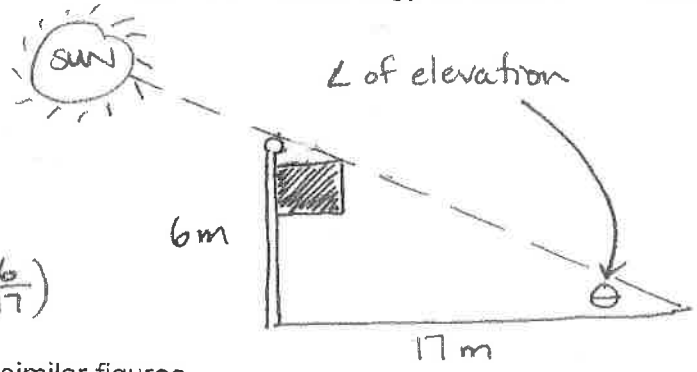
56 Find the angle of elevation of the sun when a 6 – meter flagpole casts a 17 – meter shadow. Round to the nearest tenth.

A. 19.4°

B. 20.6°

C. 69.3°

D. 70.3°



$\theta = \tan^{-1}\left(\frac{6}{17}\right)$

$\theta = 19.4°$

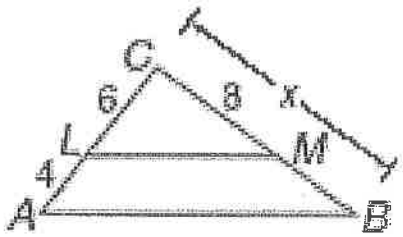
57 Find the value of x given the similar figures.

A. 32

B. $5\frac{1}{3}$

C. $13\frac{1}{3}$

D. 6



$\frac{x}{8} = \frac{10}{6}$

$\frac{6x}{6} = \frac{80}{6}$

$x = 13.\overline{3}$

$x = 13\frac{1}{3}$

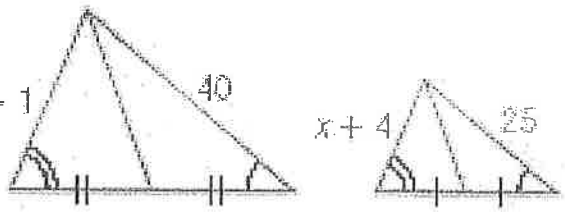
58 Find the value of x given the similar figures.

A. 20

B. 12

C. 3

D. 13.5



$\frac{2x+1}{x+4} = \frac{40}{25}$

$40(x+4) = 25(2x+1)$

$40x + 160 = 50x + 25$

$-40x \quad -40x$

$160 = 10x + 25$

$-25 \quad -25$

$135 = 10x$

$\frac{135}{10} = \frac{10x}{10}$

$13.5 = x$

59 The drawing below illustrates two poles supported by wires. $\Delta ABC \sim \Delta GED, \overline{AF} \cong \overline{CF}$, and $\overline{FG} \cong \overline{GC} \cong \overline{DC}$. Find the height of the pole $\overline{EC}$.

A. 18 ft.

B. 10 ft.

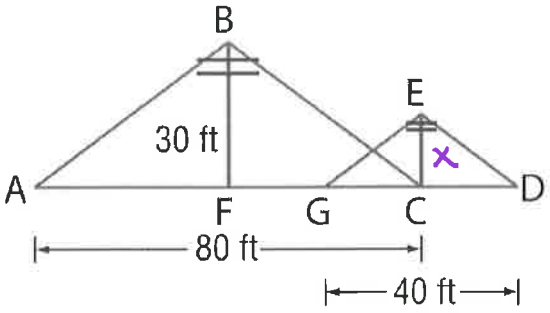
C. 15 ft.

D. 22 ft.

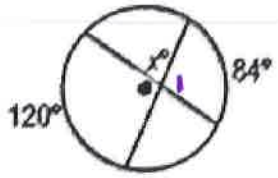
$\frac{30}{x} = \frac{80}{40}$

$\frac{80x}{80} = \frac{1200}{80}$

$x = 15\text{ft}$



60 Find the value of x.



$m\angle 1 = \frac{1}{2}(84+120)$

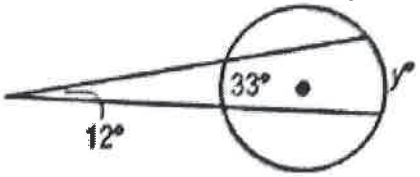
$m\angle 1 = 102$

$x = 180 - 102$

$x = 78°$

A. 78 **B.** 90 **C.** 102 **D.** 156

61 Find the value of y.



$(2)\ 12 = \frac{1}{2}(y-33)$

$24 = y - 33$

$+33 \quad +33$

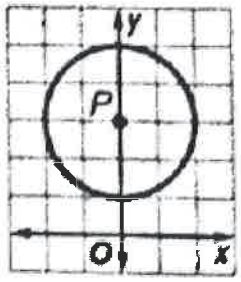
$57 = y$

A. 66 **B.** 57 **C.** 45 **D.** 21

62 Find the center of the circle whose equation is $(x+11)^2 + (y-7)^2 = 121$.

A. (-11, 7) **B.** (11, 7) **C.** (121, 49) **D.** 11

63 Find the equation of circle P.



A. $x^2 + (y-3)^2 = 4$ **B.** $x^2 + (y-3)^2 = 2$ **C.** $(x-3)^2 + y^2 = 2$ **D.** $(x-3)^2 + y^2 = 4$