الصف العاشر عام

Grade 10 General

أسئلة الهيكل

EoT2 Math Exam Coverage

FRQ (16-19) الأسئلة المقالية

FRQ (16-19)

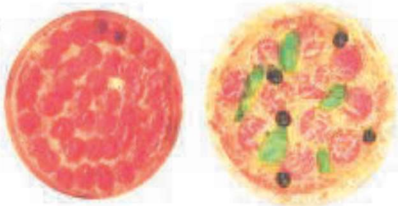
الأسئلة المقالية

16	Find measures in intersecting circles and prove relationships between circles	33 to 51	229, 230

Determine whether the circles in the figures below appear to be *congruent*, *concentric*, or *neither*.

M5: CIRCLES

33.



The pair of (Pizza) circles appear to have congruent radii, therefore the circles are congruent.

34.

The circles that comprise the toy have the same center, therefore they appear to be concentric.

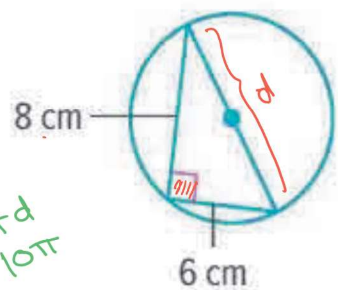
35.

The coins are not the same size; yet while they are coplanar, they do not share the same center. Therefore, the coins are neither congruent nor coplanar.

16	Find measures in intersecting circles and prove relationships between circles	33 to 51	229, 230

For each circle, find the exact circumference in terms of π.

36.



$C = \pi d$
$= 10\pi$

$C = 2\pi r$ or πd

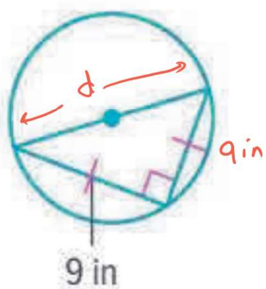
radius diamter

$d^2 = 8^2 + 6^2$

$d = \sqrt{64 + 36}$

$= 10$ cm

37.



$d = \sqrt{9^2 + 9^2}$

$= \sqrt{81 + 81}$

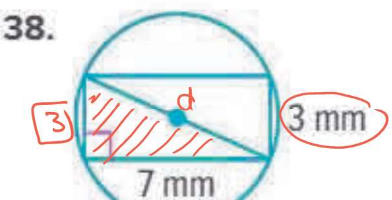
$= 9\sqrt{2}$

$C = \pi d$

$= \pi(9\sqrt{2})$

$= 9\sqrt{2}\pi$ in

38.



$d = \sqrt{3^2 + 7^2} = \sqrt{9 + 49}$

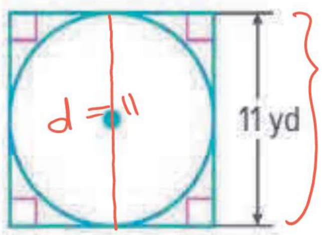
$d = \sqrt{58}$

$C = \pi d$

$= \sqrt{58}\pi$ mm

16	Find measures in intersecting circles and prove relationships between circles	33 to 51	229, 230

39.

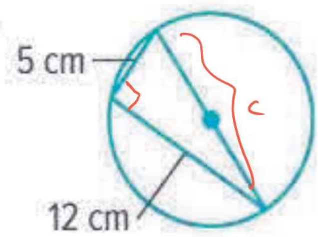


$C = \pi d$

$= 11\pi$

40.

$d = \sqrt{5^2+12^2} = 13$



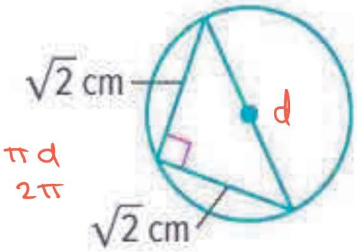
$$\begin{aligned} a^2+b^2 &= c^2 && \text{Pythagorean Theorem} \\ 5^2+12^2 &= c^2 && \text{Substitution} \\ 25+144 &= c^2 && \text{Simplify.} \\ 169 &= c^2 && \text{Add.} \\ 13 &= c && \text{Square root} \end{aligned}$$

$$\begin{aligned} C &= \pi d && \text{Circumference Formula} \\ &= \pi(13) && \text{Substitution} \end{aligned}$$

The circumference is 13π centimeters.

41.

$d = \sqrt{(\sqrt{2})^2+(\sqrt{2})^2} = 2$



$C = \pi d$

$= 2\pi$

$$\begin{aligned} a^2+b^2 &= c^2 && \text{Pythagorean Theorem} \\ (\sqrt{2})^2+(\sqrt{2})^2 &= c^2 && \text{Substitution} \\ 2+2 &= c^2 && \text{Simplify.} \\ 4 &= c^2 && \text{Add.} \\ 2 &= c && \text{Square root} \end{aligned}$$

$$\begin{aligned} C &= \pi d && \text{Circumference Formula} \\ &= \pi(2) && \text{Substitution} \end{aligned}$$

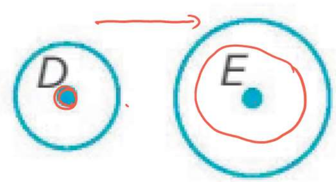
The circumference is 2π centimeters.

16	Find measures in intersecting circles and prove relationships between circles	33 to 51	229, 230

42. PROOF Write a paragraph proof to prove Theorem 5.1.

Given: $\odot D$ and $\odot E$

Prove: $\odot D \sim \odot E$



Proof: A circle is a locus of points in a plane equidistant from a given point.
For any two circles $\odot D$ and $\odot E$, there exists a translation that maps center D onto center E, moving $\odot D$ so it is concentric with $\odot E$.
There also exists a dilation with scale factor k such that each point that makes up $\odot D$ is moved to be the same distance from center D as the points that make up $\odot E$ are from center E.
Therefore, $\odot D$ is mapped onto $\odot E$. Because there exists a rigid motion followed by a scaling that maps $\odot D$ onto $\odot E$, $\odot D \sim \odot E$. Thus, all circles are similar.

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43. USE A SOURCE Go online to research a famous clock face. Then use the diameter of the clock face to find the circumference. Round your answer to the nearest hundredth.

The face of the clock in Elizabeth Tower in London, England, has a diameter of 23 feet.

$C = \pi d$ Circumference Formula

$= \pi(23)$ Substitution

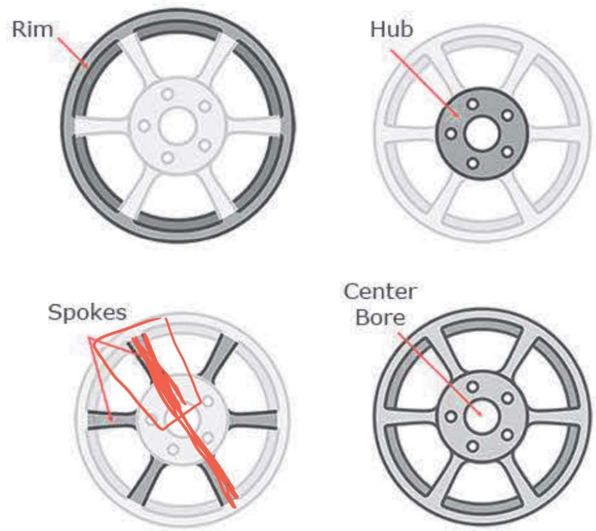
≈ 72.26 Use a calculator.

$C = \pi d$
$= 23\pi$
$\simeq 72.26$ ft

The circumference of the face of the clock in Elizabeth Tower in London, England has a circumference of about 72.26 feet.

16	Find measures in intersecting circles and prove relationships between circles	33 to 51	229, 230

44. **WHEELS** Zack is designing wheels for a concept car. The diameter of the wheel is 18 inches. Zack wants to make spokes in the wheel that run from the center of the wheel to the rim. In other words, each spoke is a radius of the wheel. How long are these spokes?



$r = \dfrac{d}{2}$ Radius Formula

$r = \dfrac{18}{2}$ or 9 Substitute and simplify.

45. **PRECISION** Kathy slices through a circular cake. The cake has a diameter of 14 inches. The slice that Kathy made is straight and has a length of 11inches. Did Kathy cut along a *radius*, a *diameter*, or a *chord* of the circle?

It is given the diameter of the cake is 14 inches.
Therefore the radius of the cake is 7 inches.
Since the slice Kathy made is straight and has a length of 11 inches and $11 \neq 14$ and $11 \neq 7$, Kathy cut along a chord of the circular cake.

16	Find measures in intersecting circles and prove relationships between circles	33 to 51	229, 230

46. **REASONING** Three identical circular coins are lined up in a row as shown. The distance between the centers of the first and third coins is 3.2 centimeters. What is the radius of one of these coins?

The coins are congruent, therefore they have their radii have the same measure.

$r + d + r = 3.2$	The distance goes from 1st and 3rd centers.
$r + 2r + r = 3.2$	$d = 2r$
$4r = 3.2$	Add.
$r = 0.8$	Divide each side by 4.

$r + \cancel{d}^{\,2r} + r = 3.2$

$4r = 3.2 \quad \div 4$

$\boxed{r = 0.8}$ cm

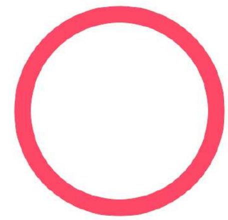
The radius of one of the coins is 0.8 centimeters.

16	Find measures in intersecting circles and prove relationships between circles	33 to 51	229, 230

47. **EXERCISE HOOPS** Taiga wants to make a circular loop that he can twirl around his body for exercise. He will use a tube that is 2.5 meters long.

a. What will be the diameter of Taiga's exercise hoop? Round your answer to the nearest thousandth of a meter.

b. What will be the radius of Taiga's exercise hoop? Round your answer to the nearest thousandth of a meter.



a.

$C = \pi d$ Circumference Formula

$2.5 = \pi d$ Substitution

$\frac{2.5}{\pi} = d$ Divide each side by π.

$0.796 \approx d$ Use a calculator.

The diameter of the hoop is about 0.796 meter.

b.

$r = \frac{d}{2}$ Radius Formula

$r \approx \frac{0.796}{2}$ or 0.398 Substitute and simplify.

16	Find measures in intersecting circles and prove relationships between circles	33 to 51	229, 230

48. **WRITE** How can we describe the relationships that exist between circles and line segments?

- ❑ **A line and a circle may intersect in one point, two points, or may not intersect at all.**
- ❑ **A line that intersects a circle in one point can be described as a tangent.**
- ❑ **A line that intersects a circle in exactly two points can be described as a secant.**
- ❑ **A line segment with endpoints on a circle can be described as a chord. If the chord passes through the center of the circle, it can be described as a diameter. A line segment with endpoints at the center and on the circle can be described as a radius.**

❑قد يتقاطع الخط والدائرة في نقطة واحدة أو نقطتين أو قد لا يتقاطعان على الإطلاق.

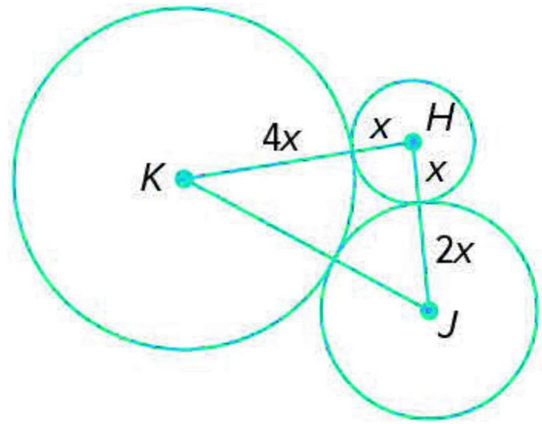
❑يمكن وصف الخط الذي يتقاطع مع دائرة في نقطة واحدة بأنه مماس.

❑يمكن وصف الخط الذي يتقاطع مع دائرة في نقطتين بالضبط بأنه قاطع.

❑يمكن وصف القطعة المستقيمة ذات نقاط النهاية على الدائرة بأنها وتر. إذا مر الوتر عبر مركز الدائرة ، فيمكن وصفه بالقطر. يمكن وصف القطعة المستقيمة التي تحتوي على نقاط نهاية في المركز وعلى الدائرة بأنها نصف قطر.

16	Find measures in intersecting circles and prove relationships between circles	33 to 51	229, 230

The sum of the circumferences of circles *H*, *J*, and *K* shown is 56π units. Find *KJ*.



Circle K: $C_K = 2\pi r$

$= 2\pi(4x)$

$= 8\pi x$

Circle H: $C_H = 2\pi(x)$

$= 2\pi x$

Circle J: $C_J = 2\pi(2x)$

$= 4\pi x$

total Circumference $= C_K + C_H + C_J$

$56\pi = 8\pi x + 2\pi x + 4\pi x$

$56\pi = 14\pi x$

$\boxed{x = 4}$

$KJ = 4x + 2x$

$= 6x$

$KJ = 6(4) = 24$

16	Find measures in intersecting circles and prove relationships between circles	33 to 51	229, 230

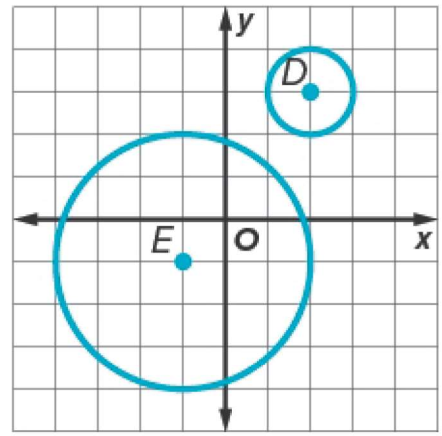
Is the distance from the center of a circle to a point in the interior of a circle *sometimes*, *always*, or *never* less than the radius of the circle? Justify your argument.

A radius is a segment drawn between the center of the circle and a point on the circle. A segment drawn from the center to a point inside the circle will always have a length less than the radius of the circle.

نصف القطر هو قطعة مرسومة بين مركز الدائرة ونقطة على الدائرة. القطعة المرسومة من المركز إلى نقطة داخل الدائرة سيكون طولها دائما أقل من نصف قطر الدائرة.

16	Find measures in intersecting circles and prove relationships between circles	33 to 51	229, 230

51. **CREATE** Design a sequence of transformations that can be used to prove that $\odot D$ is similar to $\odot E$.

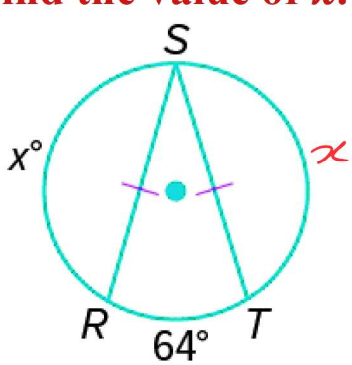


First translate $\odot$D by 3 units left and 4 units down so that its center is at the same coordinates as the center of $\odot$E, (–1, 1). Then since the radius of $\odot$D is 1 unit, and the radius of $\odot$E is 3 units, dilate circle D by a scale factor of 3 centered at (–1, –1).

17	Solve problems using the relationships between arcs, chords, and diameters	1 to 16	245

M5: CIRCLES

Find the value of *x*.



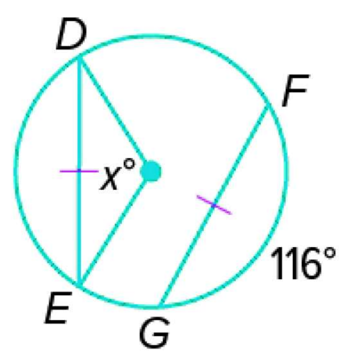
$\overline{SR}$ and $\overline{ST}$ are congruent chords, so the corresponding arcs $\widehat{SR}$ and $\widehat{ST}$ are congruent.

$x + x + 64° = 360°$

$2x + 64° = 360°$

$2x = 360° - 64° = 296$

$\boxed{x = 148}$



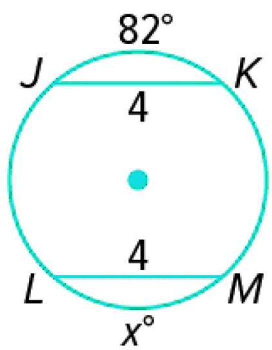
$\overline{DE}$ and $\overline{FG}$ are congruent chords, so the corresponding arcs $\widehat{DE}$ and $\widehat{FG}$ are congruent and therefore have equal measures.

Since we are given $m\widehat{FG} = 116°$, then $m\widehat{DE} = 116°$. By definition, a minor arc is equal to the measure of its related central angle. So, the central angle measures $x°$, or $116°$; therefore, $x = 116$.

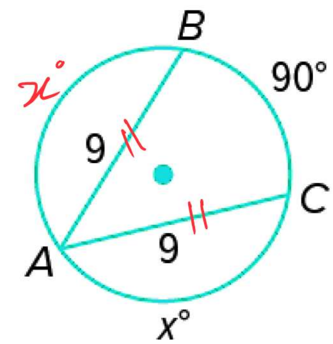
17	Solve problems using the relationships between arcs, chords, and diameters	1 to 16	245

Find the value of x.

M5: CIRCLES



$\overline{JK}$ and $\overline{LM}$ are congruent chords, so the corresponding arcs $\widehat{JK}$ and $\widehat{LM}$ are congruent and therefore have equal measures.
Since we are given $m\widehat{JK} = 82°$, then $m\widehat{LM} = 82°$.
Therefore $x = 82$.



$\overline{AB}$ and $\overline{AC}$ are congruent chords, so the corresponding arcs $\widehat{AB}$ and $\widehat{AC}$ are congruent.

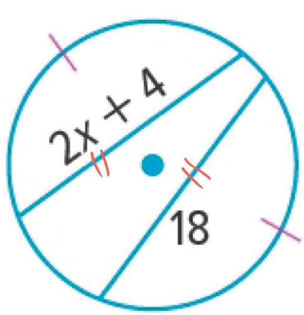
$x + x + 90° = 360°$

$2x + 90° = 360°$

$2x = 360° - 90° = 270°$

$\boxed{x = 135}$

17	Solve problems using the relationships between arcs, chords, and diameters	1 to 16	245

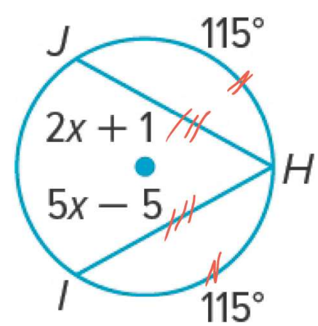


The chords shown are congruent, so the corresponding arcs are congruent.

$2x + 4 = 18$

$2x = 18 - 4 = 14 \quad \div 2$

$x = 7$



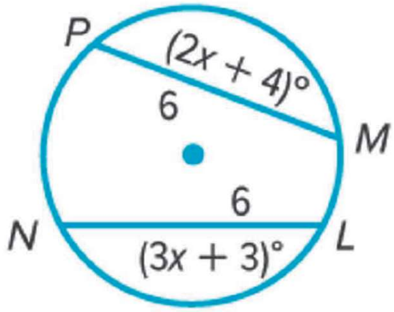
Since the arcs are congruent, the chords are congruent.

$5x - 5 = 2x + 1$

$5x - 2x = 1 + 5$

$3x = 6 \quad \div 3$

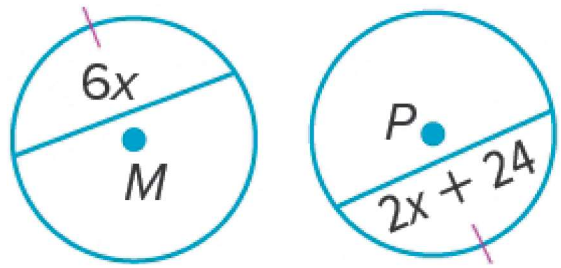
$x = 2$



The chords shown are congruent, so the corresponding arcs are congruent.

$$2x + 4 = 3x + 3 \quad \text{Definition of congruent segments}$$
$$4 = x + 3 \quad \text{Subtract } 2x \text{ from each side.}$$
$$1 = x \quad \text{Subtract 3 from each side.}$$

$\odot M \cong \odot P$



Since the arcs are congruent, their corresponding chords are congruent.

Definition of congruent segments

$6x = 2x + 24$

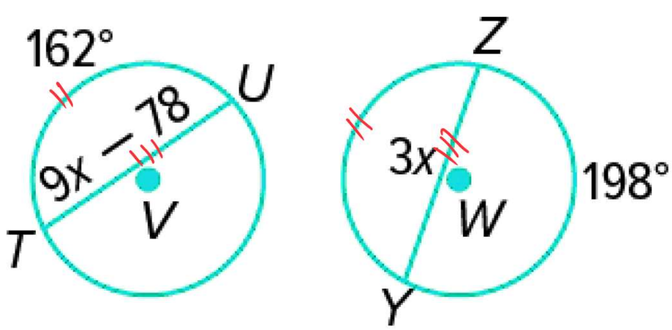
$6x - 2x = 24$

$4x = 24 \quad \div 4$

$x = 6$

17	Solve problems using the relationships between arcs, chords, and diameters	1 to 16	245

$\odot V \cong \odot W$



The measure of the arc that corresponds to the chord labeled $3x$ has a measure of

$$360° - 198° = 162°.$$

Since the arcs are congruent, their corresponding chords are congruent.

$9x - 78 = 3x$

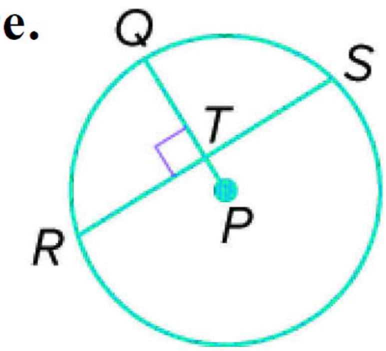
$9x - 3x = 78$

$6x = 78$

$x = 13$

17	Solve problems using the relationships between arcs, chords, and diameters	1 to 16	245

In $\odot P$, $PQ = 13$ and $RS = 24$. Find each measure.



10. RT

Radius $\overline{PQ}$ is perpendicular to chord $\overline{RS}$. So, by Theorem 10.4, $\overline{PQ}$ bisects $\overline{RS}$.

Therefore, $RT = TS$.
By the definition of segment bisector,
$RT = \frac{1}{2}RS$ or $\frac{1}{2}(24) = 12$.

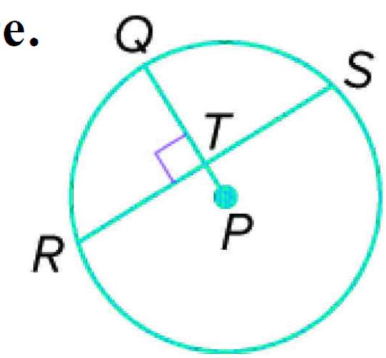
11. PT

Draw radius RP and use the Pythagorean Theorem to find PT.
RP and PQ are both radii, therefore since $PQ = 13$, $RP = 13$.

$RT^2 + PT^2 = RP^2$	Pythagorean Theorem
$12^2 + PT^2 = 13^2$	$RT = 12$ and $RP = 13$
$144 + PT^2 = 169$	Simplify.
$PT^2 = 25$	Subtract 144 from each side.
$PT = 5$	Take the positive square root of each side.

17	Solve problems using the relationships between arcs, chords, and diameters	1 to 16	245

In $\odot P$, $PQ = 13$ and $RS = 24$. Find each measure.



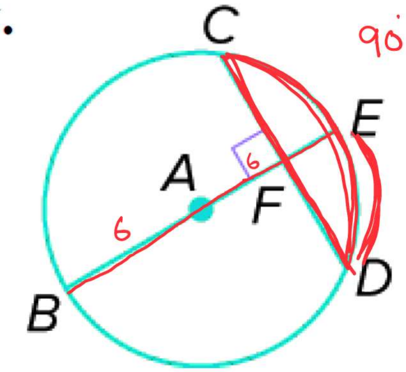
12. TQ

$TQ + PT = PQ$	Segment Addition Postulate
$TQ + 5 = 13$	$PT = 5$ and $PQ = 13$
$TQ = 8$	Subtract 5 from each side.

17	Solve problems using the relationships between arcs, chords, and diameters	1 to 16	245

In $\odot A$, $EB = 12$, $CD = 8$, and $m\overset{\frown}{CD} = 90°$. Find each measure. Round to the nearest hundredth, if necessary.

13. $m\overset{\frown}{DE}$ 14. FD 15. AF



$d = EB = 12$

$r = \frac{12}{2} = 6$

13. $m\overset{\frown}{DE}$

Because diameter $\overline{BE}$ is perpendicular to $\overline{CD}$, $\overline{BE}$ bisects $\overset{\frown}{CED}$ and $\overline{CD}$ by Theorem 10.4.

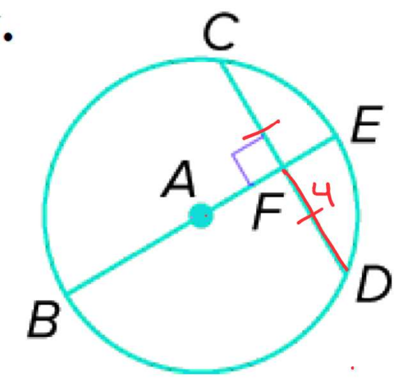
Therefore, $m\overset{\frown}{CE} = m\overset{\frown}{DE}$.

By substitution, $m\overset{\frown}{DE} = \frac{90}{2}$ or $45°$.

17	Solve problems using the relationships between arcs, chords, and diameters	1 to 16	245

In $\odot A$, $EB = 12$, $CD = 8$, and $m\overset{\frown}{CD} = 90°$. Find each measure. Round to the nearest hundredth, if necessary.

13. $m\overset{\frown}{DE}$ 14. FD 15. AF



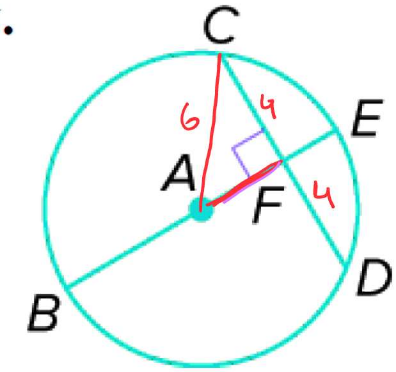
14. FD

Because diameter $\overline{BE}$ is perpendicular to $\overline{CD}$, $\overline{BE}$ bisects chord $\overline{CD}$ by Theorem 10.4.

So, $FD = \frac{1}{2}(8)$ or 4.

In $\odot A$, $EB = 12$, $CD = 8$, and $m\overset{\frown}{CD} = 90°$. Find each measure. Round to the nearest hundredth, if necessary.

13. $m\overset{\frown}{DE}$ 14. FD 15. AF



15. AF

Draw radius $\overline{AD}$.

Radius $\overline{AD}$ forms right $\triangle ADF$.

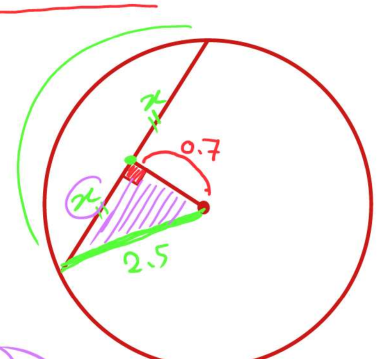
Use the Pythagorean Theorem to find AF.

$AF^2 + FD^2 = AD^2$	Pythagorean Theorem
$AF^2 + 4^2 = 6^2$	$FD = 4$ and $AD = 6$
$AF^2 + 16 = 36$	Simplify.
$AF^2 = 20$	Subtract 16 from each side.
$AF \approx 4.47$	Take the positive square root of each side.

$AC = r = BA$
$= AE$
$= \frac{EB}{2}$
$= 6$

16. **USE A MODEL** For security purposes a jewelry company prints a hidden watermark on the logo of its official documents. The watermark is a chord located 0.7 cm from the center of a circular ring that has a 2.5 cm radius. To the nearest tenth, what is the length of the chord?

Use the Pythagorean Theorem to find the measure, x, of half of the chord that is bisected by the radius.



$$0.7^2 + x^2 = 2.5^2$$
$$0.49 + x^2 = 6.25$$
$$x^2 = 5.76$$
$$x = 2.4$$

$2(2.4) = 4.8$

$r = 2.5$

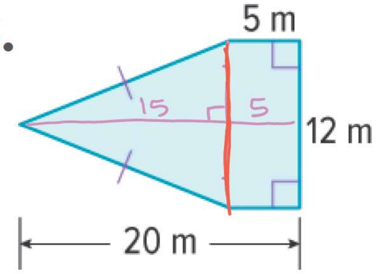
The length of the entire chord is $2x$ or 4.8 centimeters.

18	Find areas of composite figures	8 to 13	297

M6: MEASUREMENTS

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

8.



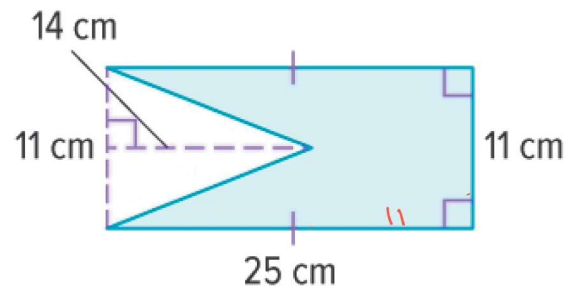
$A_R = lw = 12(5) = 60 \text{ m}^2$

$A_t = \frac{1}{2}bh = \frac{1}{2}(\cancel{12}^{6})(15) = 90 \text{ m}^2$

total area $= 60 + 90$

$= 150 \text{ m}^2$

9.



$A = \frac{1}{2}bh$	Area of a triangle	$A = \ell w$	Area of a rectangle
$= \frac{1}{2}(11)(14)$	$b = 11, h = 14$	$= 25(11)$	$\ell = 25, w = 11$
$= 77 \text{ cm}^2$	Simplify.	$= 275 \text{ cm}^2$	Simplify.

area of figure = area of rectangle − area of triangle

$= 275 - 77$

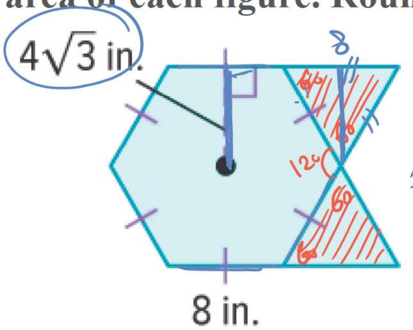
$= 198 \text{ cm}^2$

18	Find areas of composite figures	8 to 13	297

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

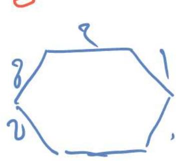
M6: MEASUREMENTS

10.



$A = \frac{1}{2}bh$	Area of a triangle
$= \frac{1}{2}(8)(4\sqrt{3})$	$b = 8, h = 4\sqrt{3}$
$= 16\sqrt{3} \text{ in}^2$	Simplify.
$A = \frac{1}{2}aP$	Area of a regular polygon
$= \frac{1}{2}(4\sqrt{3})(6 \cdot 8)$	$a = 4\sqrt{3}, P = 6(8)$
$= 96\sqrt{3} \text{ in}^2$	Simplify.

$\frac{180°(6-2)}{6} = 120°$



$\boxed{6 \times 8}$

area of figure = 2 • area of triangle + area of regular hexagon

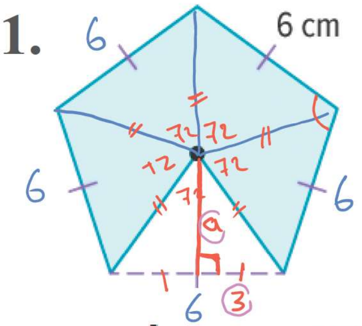
$= 2(16\sqrt{3}) + 96\sqrt{3}$

$\approx 221.7 \text{ in}^2$

18	Find areas of composite figures	8 to 13	297

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

11.



$\tan 36° = \frac{3}{a}$ $\tan x = \frac{\text{opposite}}{\text{adjacent}}$ or $\frac{3}{\text{apothem}}$

$\frac{3}{\tan 36°} = a$ Solve for a.

$4.129 = a$ Simplify.

Deg

R

D

$A = \frac{1}{2}bh$ Area of a triangle

$= \frac{1}{2}(6)(4.129)$ $b = 6, h = 4.129$

$= 12.387 \text{ cm}^2$ Solve.

$A = \frac{1}{2}aP$ Area of a regular polygon

$= \frac{1}{2}(4.129)(30)$ $a = 4.13, P = 5•6, \text{ or } 30$

$= 61.935 \text{ cm}^2$ Solve.

area of figure = area of pentagon − area of triangle

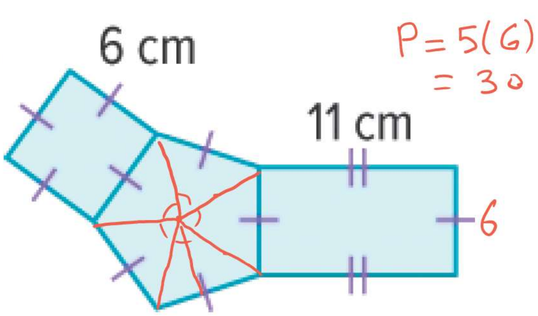
$\approx 61.935 - 12.387$

$\approx 49.5 \text{ cm}^2$

18	Find areas of composite figures	8 to 13	297

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

12.



$P = 5(6)$
$= 30$

The regular pentagon consists of 5 congruent isosceles triangles, with central angle of 72°

$\tan 36° = \frac{3}{a}$ $\tan x = \frac{\text{opposite}}{\text{adjacent}}$

$\frac{3}{\tan 36°} = a$ Solve for a.

$4.13 \approx a$ Simplify.

$A = s^2$ Area of a square

$= 6^2$ $s = 6$

$= 36 \text{ cm}^2$ Simplify.

$A = \ell w$ Area of a rectangle

$= 11(6)$ $\ell = 11, w = 6$

$= 66 \text{ cm}^2$ Simplify.

$A = \frac{1}{2}aP$ Area of a regular polygon

$\approx \frac{1}{2}(4.13)(30)$ $a \approx 4.13, P = 5•6, \text{ or } 30$

$\approx 61.95 \text{ cm}^2$ Simplify.

area of figure = area of square + area of rectangle + area of pentagon

$\approx 36 + 66 + 61.95$

$\approx 163.9 \text{ cm}^2$

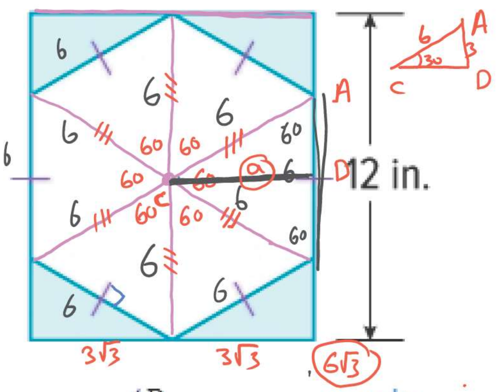
18	Find areas of composite figures	8 to 13	297

$a^2 + 3^2 = 6^2$

$a^2 = 36 - 9 = 27$ $a = 3\sqrt{3}$

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

13.



$\frac{360}{6}$

$=60$

$\tan 30° = \frac{AD}{DC}$ $\tan x = \frac{\text{opposite}}{\text{adjacent}}$

$\tan 30° = \frac{3}{DC}$ $AD = 3.$

$\frac{3}{\tan 30°} = DC$ Solve for DC.

$A = \ell w$ Area of a rectangle

$\approx 10.392(12)$ $\ell \approx 10.392,\ w = 12$

$\approx 124.704 \text{ in}^2$ Simplify.

$A = \frac{1}{2}aP$ Area of a regular polygon

$\approx \frac{1}{2}(5.196)(6 \cdot 6)$ $a \approx 5.196\ P = 6(6)$

≈ 93.528 Simplify.

area of figure = area of rectangle − area of hexagon

$\approx 124.704 - 93.528$

$\approx 31.2 \text{ in}^2$

$6(6)$ -

19	Write polynomials in standard form	1 to 14	635

Determine whether each expression is a polynomial. If it is a polynomial, find the degree and determine whether it is a *monomial*, *binomial*, or *trinomial*.

M11: POLYNOMIALS

1. $\frac{5y^3}{x^2} + 4x$ The term $\frac{5y^3}{x^2}$ is not a monomial. A monomial is a number, a variable, or a product of a number and one or more variables. This term is represents a quotient of two monomials.

2. 21 degree = 0

$21x^0$

Since a monomial is a number, a variable, or a product of a number and one or more variables, and 21 is a number, then 21 is a monomial. Any constant number has a degree of 0.

3. $c^4 - 2c^2 + 1$ polynomial

trinomial

degrea = 4

4. $d + 3d^c$ d^c

A monomial is a number, a variable, or a product ofa number and one or more variables. The term $3d^c$ has a variable as its exponent, which is not included in the definition of monomial.

5. $a - a^2$ polynomal

binomial

degree = 2

6. $5n^3 + nq^3$ polynomial

binomial

degree = 4

19	Write polynomials in standard form	1 to 14	635

Write each polynomial in standard form. Identify the leading coefficient.

7. $5x^2 - 2 + 3x$

$5x^2 + 3x - 2$

lead Coefficient = 5

8. $8y + 7y^3$

$7y^3 + 8y$ L.C. = 7

9. $4 - 3c - 5c^2$

$-5c^2 - 3c + 4$

L.C. = -5

10. $-y^3 + 3y - 3y^2 + 2$

$-y^3 - 3y^2 + 3y + 2$

lead Coef. -1

11. $11t + 2t^2 - 3 + t^5$

$\boxed{}t^5 + 2t^2 + 11t - 3$

lead Coeff. = 1

12. $2 + r - r^3$

$-r^3 + r + 2$ lead Coeff. = -1

13. $\frac{1}{2}x - 3x^4 + 7$

$-3x^4 - \frac{1}{2}x + 7$

lead Coff = -3

14. $-9b^2 + 10b - b^6$

$-b^6 - 9b^2 + 10b$ leed Coeff = -1