تجميعة أسئلة وفق الهيكل الوزاري منهج ريفيل

تاريخ إضافة الملف على موقع المناهج: 2024-11-02 14:00:07

المزيد من مادة رياضيات:	ملفات ا كتب للمعلم ا كتب للطالب ا اختبارات الكترونية ا اختبارات ا حلول ا عروض بوربوينت ا أوراق عمل منهج انجليزي ا ملخصات وتقارير ا مذكرات وبنوك ا الامتحان النهائي ا للمدرس
	إعداد: Abdelaziz Moustafa

التواصل الاجتماعي بحسب الصف العاشر العام

صفحة المناهج الإماراتية على فيسبوك					
المواد على تلغرام	التربية الاسلامية	اللغة العربية	اللغة الانجليزية	الرياضيات	

المزيد من الملفات بحسب الصف العاشر العام والمادة رياضيات في الفصل الأول

1	ملزمة تجميعة أسئلة وفق الهيكل الوزاري منهج بريدج
2	حل تجميعة أسئلة وفق الهيكل الوزاري حسب منهج بريدج
3	تجميعة أسئلة وفق الهيكل الوزاري منهج بريدج
4	تجميعة أسئلة وفق الهيكل الوزاري الجديد منهج بريدج
5	الهيكل الوزاري الجديد المسار العام منهج ريفيل

مدرسة الحصن للتعليم الثانوي

أسئلة الهيكل للرياضيات

الصف العاشر عام

الفصل الدراسي الأول للعام 2025/2024

كلنا ناجحون بإذن الله

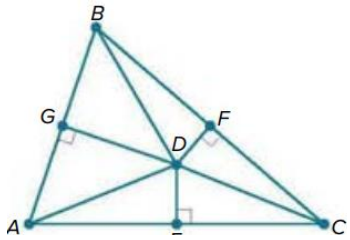
أبنائي الطلاب....

العلم هو الوسيلة الوحيدة التي يرتفع بها شأن الانسان إلى مراتب الكرامة والشرف....

الأستاذ. مصطفى عبد العزيز
مدرسة الحصن للتعليم الثانوي

1	Prove theorems and apply geometric methods to solve design problems using the perpendicular bisectors of triangles	Example 3	Page 5

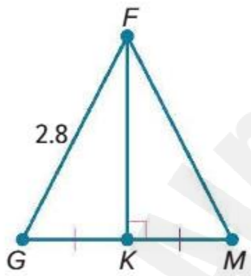
Find BF if D is the circumcentre of ΔABC, AC = 9, DE = 1.83, and DF = 1.53.



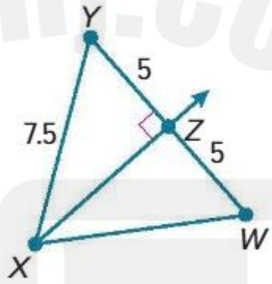
2	Prove theorems and solve problems about perpendicular bisectors of line segments	1-6, 11-14	Page 7,8

Find each measure.

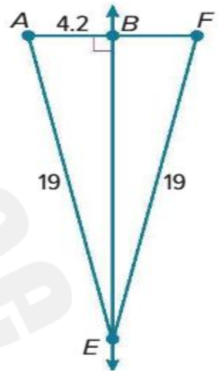
1. *FM*



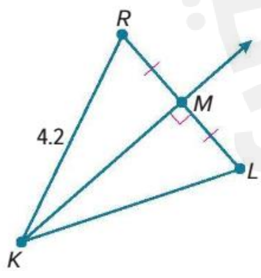
2. *XW*



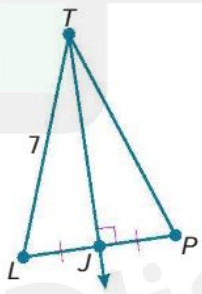
3. *BF*



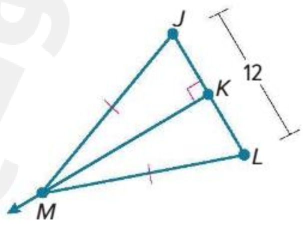
4. *KL*



5. *TP*



6. *KL*



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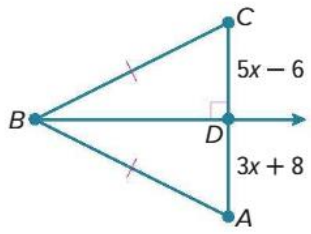
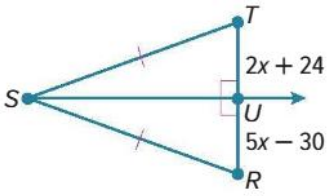
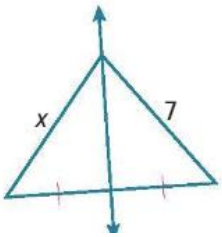




Determine whether there is enough information given in each diagram to find the value of x. If there is, find the value of x. If there is not, explain what needs to be given.

13.



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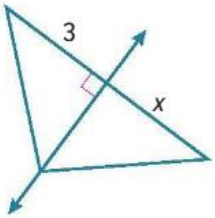


3	Prove and apply the Triangle Inequality Theorem	1 to 12	P 43

Is it possible to form a triangle with the given side lengths? If not, explain why not.

1. 9, 12, 18

2. 8, 9, 17

3. 14, 14, 19

4. 23, 26, 50

5. 32, 41, 63

6. 2.7, 3.1, 4.3

Find the range for the measure of the third side of a triangle given the measures of two sides.

9. 6 ft and 19 ft

10. 7 km and 29 km

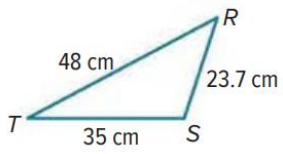
11. 13 in. and 27

12. 18 ft and 23 ft

4	Prove and apply theorems about inequalities in one triangle	6 to 11	P 31

List the angles and sides of each triangle in order from smallest to largest.

6.



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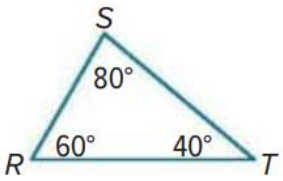

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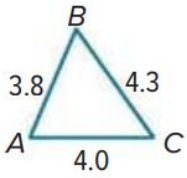

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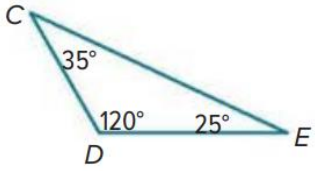

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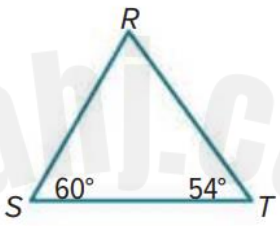

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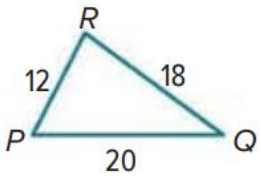
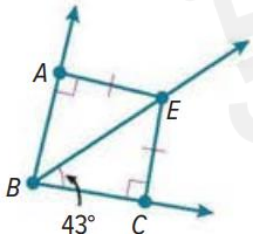
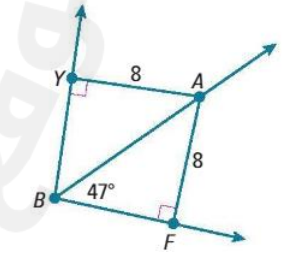


5	Prove theorems and solve problems about angle bisectors	1 to 6	P 15

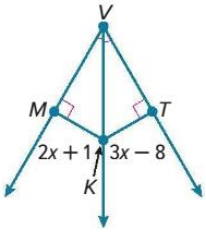
1. $m\angle ABE$



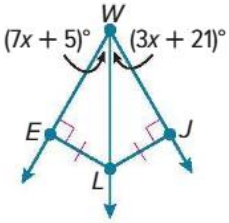
2. $m\angle YBA$



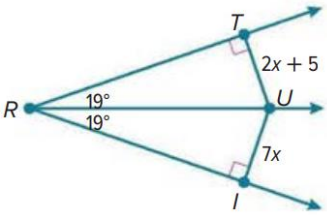
3. MK



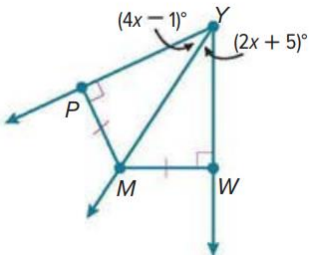
4. $m\angle EWL$



5. IU

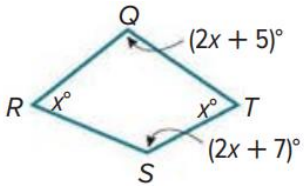


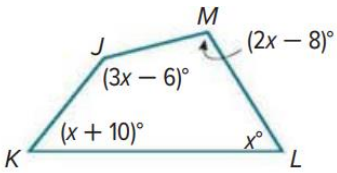
6. $m\angle MYW$

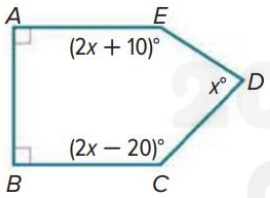


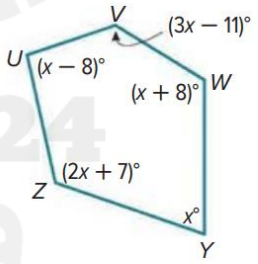
6	Prove and use the Polygon Interior Angles Sum Theorem	1 to 6	P 63

Find the measure of each interior angle.



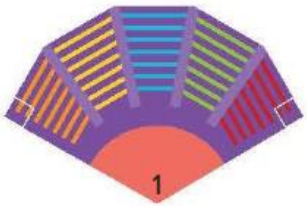






5. ARCHITECTURE In the Uffizi gallery in Florence, Italy, there is a room built by Buontalenti called the Tribune (La Tribuna in Italian). This room is shaped like a regular octagon. What is the measure of the angle formed by two consecutive walls of the Tribune?

6. THEATER A theatre floor plan is shown in the figure. The upper five sides are part of a regular dodecagon. Find m∠1.



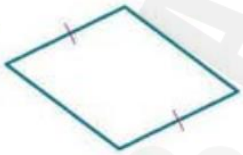
7	Use the tests for parallelograms to determine whether quadrilaterals are parallelograms	1 to 10	P 79

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

1.

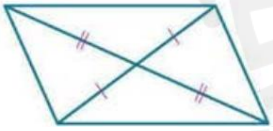
2.

3.



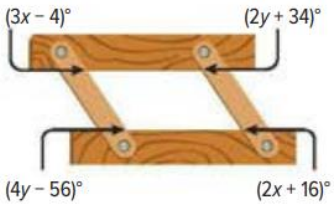
4.

5.

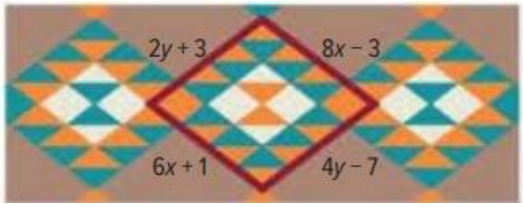


6.

7. ORGANIZATION The space between the hinges and trays of a collapsible tray organizer appears to be a parallelogram. Find the values of x and y so that the trays and hinges of the organizer form a parallelogram.

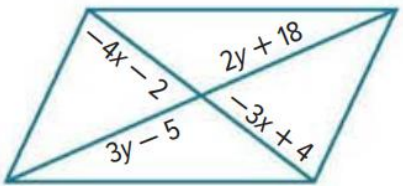


8. PATTERNS Many Native American rugs and blankets incorporate parallelograms into the designs. Find the values of x and y so that the quadrilateral shown is a parallelogram.



Find the values of x and y so that each quadrilateral is a parallelogram.

9.



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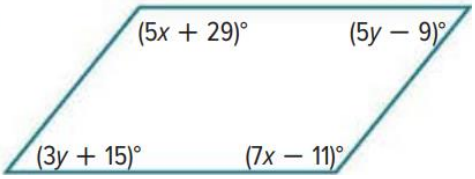
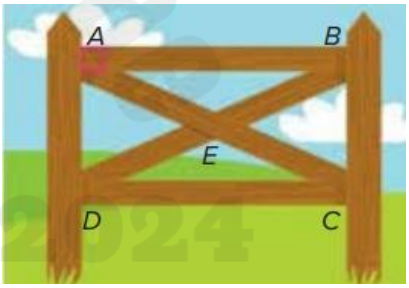


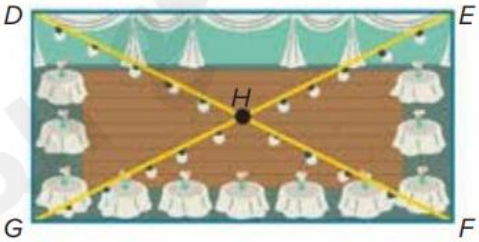
8	Recognize and apply the properties of rectangles	1 to 14	P 87

FENCING X-braces are also used to provide support in rectangular fencing. If AB = 6 feet, AD = 2 feet, and m ∠DAE = 65°, find each measure. Round to the nearest tenth, if necessary.



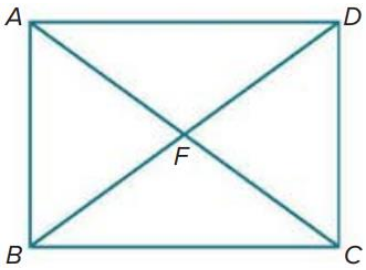
1. BC
2. DB
3. m ∠CEB
4. m ∠EDC

PROM The prom committee is decorating the venue for prom and wants to hang lights above the diagonals of the rectangular room. If DH = 44.5 feet, EF = 39 feet, and m ∠GHF = 128°, find each measure.



5. DG
6. GE
7. m ∠EHF
8. m ∠HEF

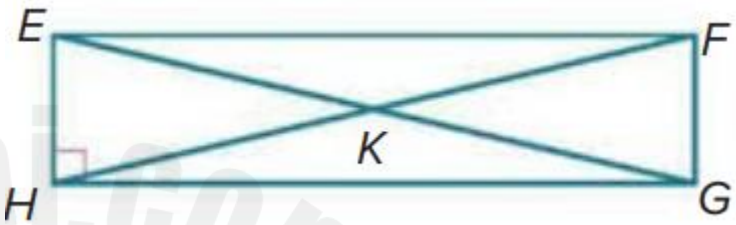
9. Quadrilateral ABCD is a rectangle. If m ∠ADB = (4x + 8) ° and m ∠DBA = (6x + 12) °, find the value of x.



Quadrilateral EFGH is a rectangle. Use the given information to find each measure.

10. If m ∠FEG = 57°, find m ∠GEH.

11. If m ∠HGE = 13°, find m ∠FGE.



12. If FK = 32 feet, find EG.

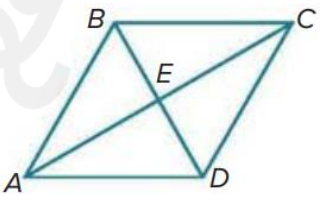
13. Find m ∠HEF + m ∠EFG.

14. If EF = 4x - 6 and HG = x + 3, find EF.

9	Recognize and apply the properties of rhombi and squares	1 to 10	P 95

Quadrilateral ABCD is a rhombus. Find each value or measure.

1. If m ∠ABD = 60°, find m ∠BDC.

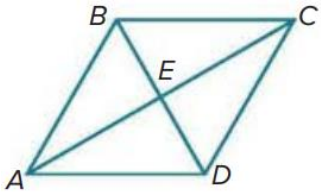


2. If AE = 8, find AC.

3. If AB = 26 and BD = 20, find AE.

4. Find m ∠CEB.

5. If m ∠CBD = 58°, find m ∠ACB.



6. If AE = 3x - 1 and AC = 16, find x.

7. If m ∠CDB = 6y° and m ∠ACB = (2y + 10) °, find the value of y.

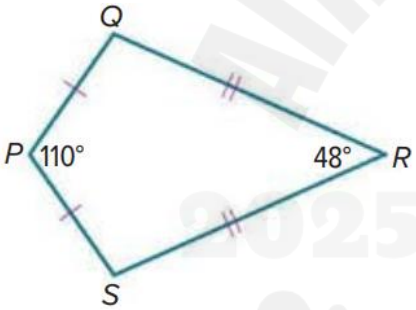
8. If AD = 2x + 4 and CD = 4x - 4, find the value of x.

9. PQRS is a square. If PR = 42, find TR.

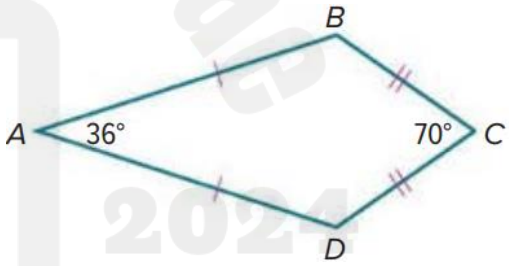
10	Apply the properties of kites to solve real-world	13-18	P 106

Find each measure in the kites.

13. m ∠Q

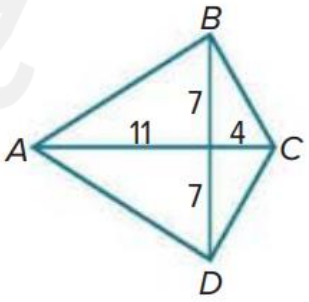


14. m ∠D



15. REASONING Quadrilateral ABCD is a kite.

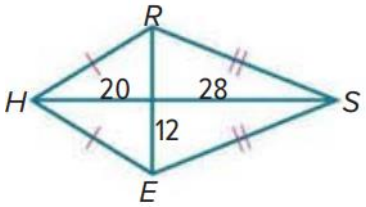
a. Find BC. Write your answer in simplest radical form.



b. Find the perimeter of kite ABCD. Round your answer to the nearest tenth, if necessary.

16. REASONING Quadrilateral HRSE is a kite.

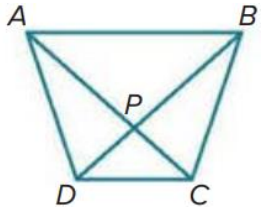
a. Find RH. Write your answer in simplest radical form.



b. Find the perimeter of kite HRSE. Round your answer to the nearest tenth, if necessary.

ABCD is a trapezoid.

17. If AC = 3x - 7 and BD = 2x + 8, find the value of x so that ABCD is isosceles.



18. If m ∠ABC = (4x + 11) ° and m ∠DAB = (2x + 33) °, find the value of x so that ABCD is isosceles.

11	Represent dilations as functions and find the scale factors of dilations.	16 to 18	P119-120

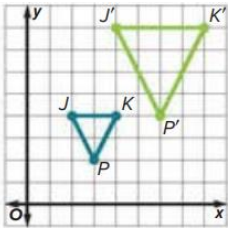
For each set of triangle vertices, find and graph the coordinates of the vertices of the image after a dilation of the triangle by the given scale factor.

6. J(−8, 0), K(−4, 4), L(−2, 0), k = 0.5

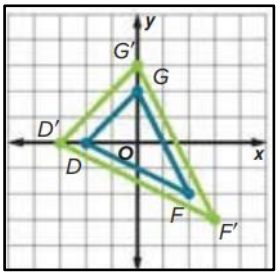
7. S (0, 0), T (−4, 0), V (−8, –8), k = 1.25

Find the scale factor of the dilation.

10. ΔJ'K'P' is the image of ΔJKP.

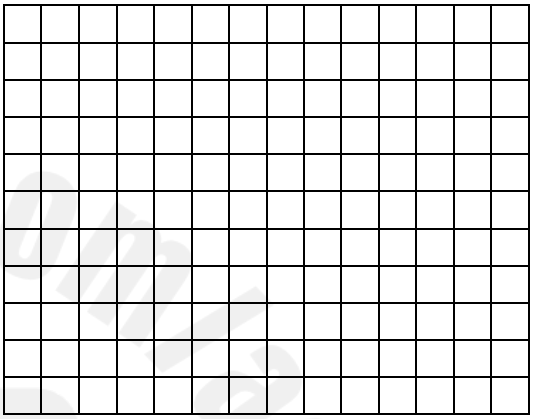


11. ΔD'F'G' is the image of ΔDFG.



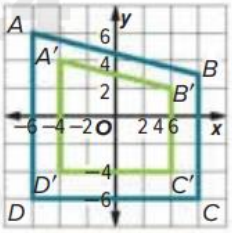
Graph the image of each polygon with the given vertices after a dilation cantered at the origin with the given scale factor.

16. R (−2, 6), S (0, −1), T (−5, 3), k = 1.5

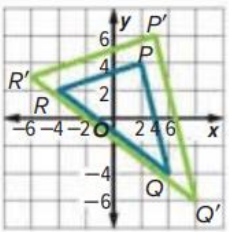


Find the scale factor of the dilation.

17. A'B'C'D' is the image of ABCD.



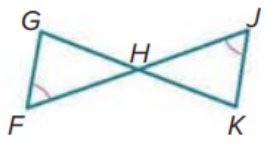
18. ΔP'Q'R' is the image of ΔPQR



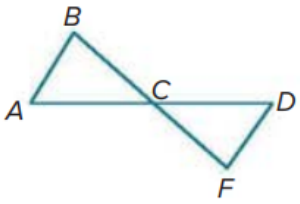
12	Use the AA Similarity criterion to solve problems and prove triangles similar	1 to 12	P 133-134

Determine whether each pair of triangles is similar. Explain your reasoning.

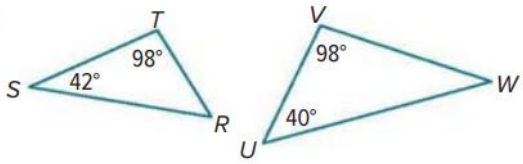
1.



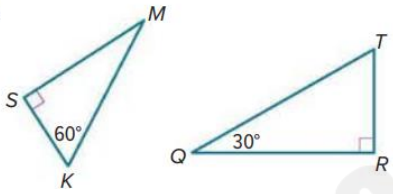
3.



2.

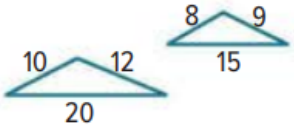


4.



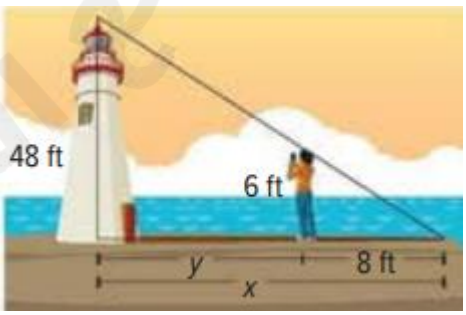
5.

6.



7. CELL TOWERS A cell phone tower casts a shadow that is 100 feet long. At the same time, Lia stands near the tower and casts a shadow that is 3 feet 4 inches long. If Lia is 4 feet 6 inches tall, how tall is the cell phone tower?

8. LIGHTHOUSE Maya wants to know how far she is standing from a lighthouse. The end of Maya's shadow coincides with the end of the lighthouse's shadow.

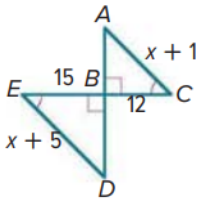


a. What is the distance from the lighthouse to the end of the lighthouse's shadow, x?

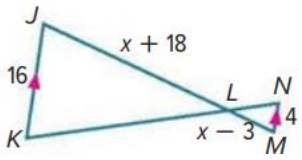
b. What is the distance from Maya to the lighthouse, y?

Identify the similar triangles. Then find each measure.

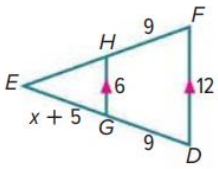
9. *AC*



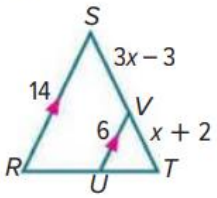
10. *JL*



11. *EH*



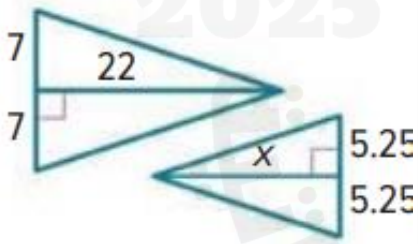
12. *VT*



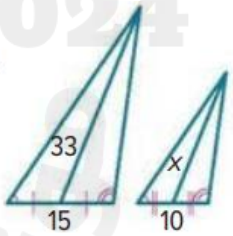
13	Solve problems and prove theorems about parts of similar triangles by using triangle similarity.	1 to 11	P153

Each pair of triangles is similar. Find the value of x.

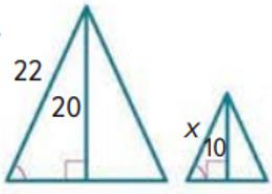
1.



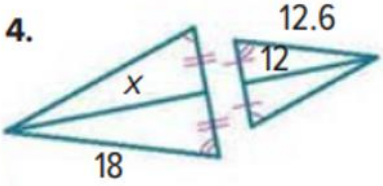
2.



3.

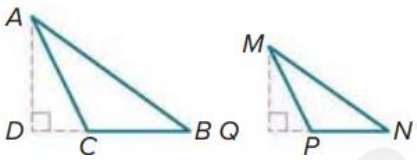


4.

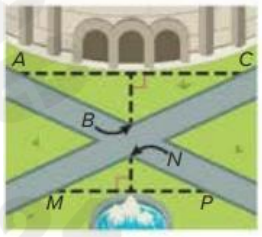


5. If $\triangle RST \sim \triangle EFG$, $\overline{SH}$ is an altitude of $\triangle RST$, $\overline{FJ}$ is an altitude of $\triangle EFG$, $ST = 6$, $SH = 5$, and $FJ = 7$, find FG.

6. If $\triangle ABC \sim \triangle MNP$, $\overline{AD}$ is an altitude of $\triangle ABC$, $\overline{MQ}$ is an altitude of $\triangle MNP$, $AB = 24$, $AD = 14$, and $MQ = 10.5$, find MN.

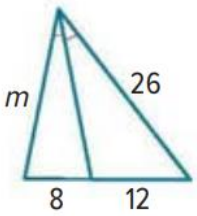


7. SCENERY The intersection of the two paths shown forms two similar triangles. If AC is 50 yards, MP is 35 yards, and the fountain is 5 yards from the intersection, about how far from the intersection is the stadium entrance? Round to the nearest yard.

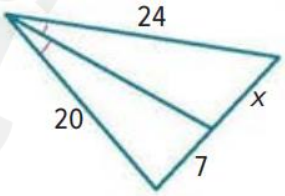


Find the value of each variable to the nearest tenth.

8.

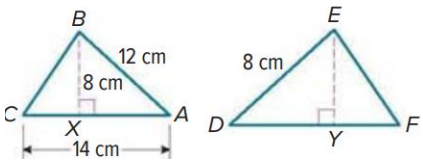


9.



For Exercises 10 and 11, $\Delta ABC \sim \Delta DEF$.

10. Find the length of $\overline{XC}$ to the nearest tenth.



11. Find the length of $\overline{EY}$ to the nearest tenth.

14	Use similarity criteria for triangles and geometric means to solve problems and to prove relationships in geometric figures.	1 to 15	P165

Find the geometric mean between each pair of numbers.

1. 4 and 6

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

3. 4 and 25

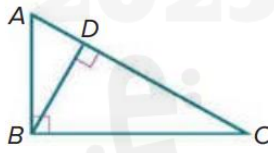
4. 12 and 20

5. 17 and 3

6. 3 and 24

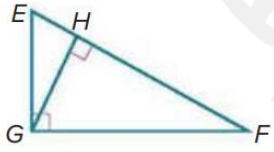
REGULARITY Write a similarity statement identifying the three similar right triangles in each figure.

7.

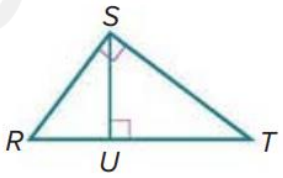


8.

9.

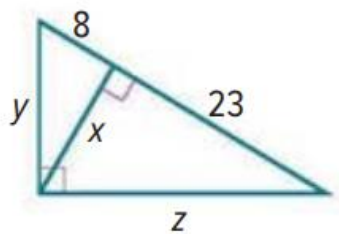


10.

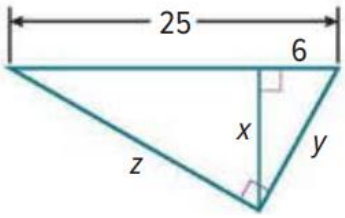


Find the values of x, y, and z.

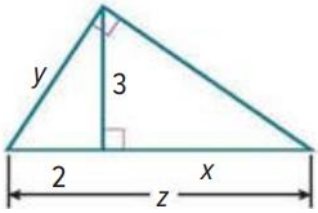
11.



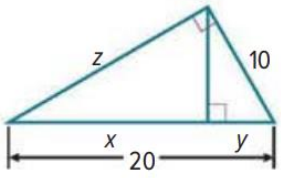
12.



13.



14.

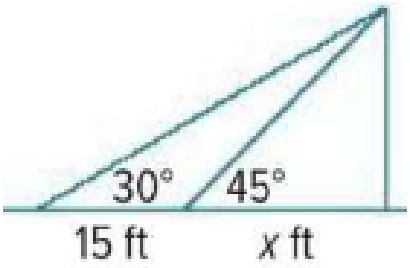


5. USE A MODEL A museum has a famous statue on display. The curator places the statue in the corner of a rectangular room and builds a 15-foot-long railing in front of the statue. The railing forms a right triangle with the corner of the room. The legs of the triangle are 12 feet and 9 feet long. Approximate how close visitors will be able to get to the statue. Draw a diagram to model the situation.

يعرض أحد المتاحف تمثالًا مشهورًا. يضع أمين المتحف التمثال في زاوية غرفة مستطيلة الشكل ويبني سياجًا بطول 15 قدمًا أمام التمثال. يشكل السياج مثلثًا قائمًا مع زاوية الغرفة. يبلغ طول أرجل المثلث 12 قدمًا و9 أقدام. احسب تقريبًا المسافة التي سيتمكن الزوار من الوصول إليها من التمثال. ارسم مخططًا لنمذجة الموقف.

15	Understand that by similarity, side ratios in 45°-45°-90° right triangles are related to the angles in the triangles	31-49	P185-186

31. REASONING Kim and Yanika are watching a movie in a movie theater. Yanika is sitting *x* feet from the screen and Kim is 15 feet behind Yanika. The angle that Kim's line of sight to the top of the screen makes with the horizontal is 30°. The angle that Yanika's line of sight to the top of the screen makes with the horizontal is 45°.



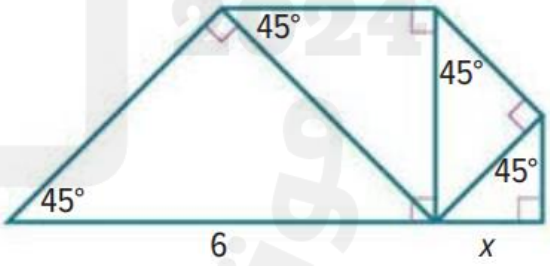
a. How high is the top of the screen in terms of x?

b. What is $\frac{x+15}{x}$?

c. How far is Yanika from the screen? Round your answer to the nearest tenth.

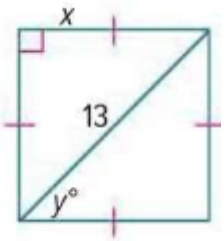
PROOF Write a paragraph proof to prove each theorem.

32. STRUCTURE Each triangle in the figure is a 45°-45°-90° triangle. Find the value of x.

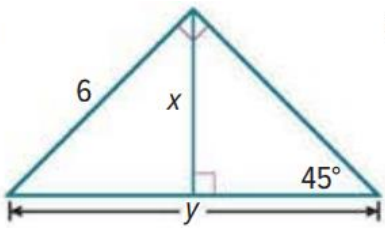


Find the values of x and y.

33.



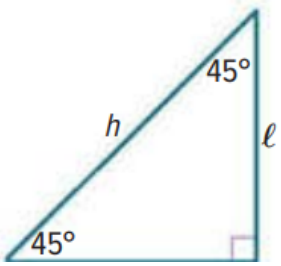
34.



39. 45°-45°-90° Triangle Theorem

Given: 45°-45°-90° triangle with a leg of length ℓ and a hypotenuse of length h

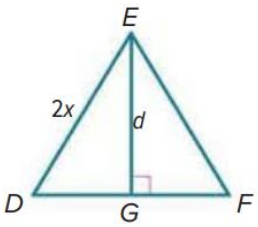
Prove: The legs are congruent, and $h = \ell\sqrt{2}$.



40. 30°-60°-90° Triangle Theorem

Given: equilateral $\triangle DEF$ with sides of length $2x$ and an altitude of length d

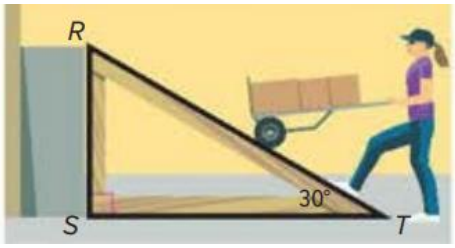
Prove: $DG = x$; $d = x\sqrt{3}$



41. ΔXYZ is a 45°-45°-90° triangle with right angle Z. Find the coordinates of X in Quadrant I for Y (-1, 2) and Z (6, 2).

42. Δ EFG is a 30°-60°-90° triangle with m ∠F = 90°. Find the coordinates of E in Quadrant III for F (-3, -4) and G (-3, 2). $\overline{FG}$ is the longer leg.

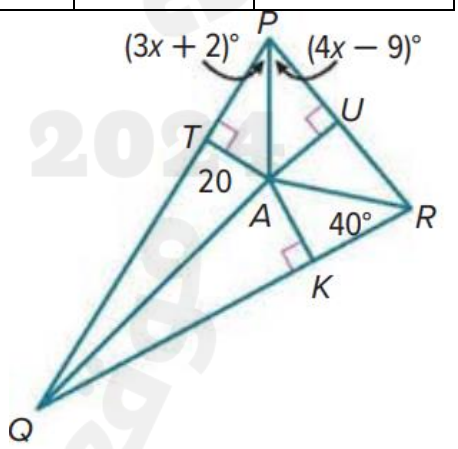
43. USE TOOLS Melody is in charge of building a ramp for a loading dock. According to the plan, the ramp makes a 30° angle with the ground. The plan also states that $\overline{ST}$ is 4 feet longer than $\overline{RS}$. Use a calculator to find the lengths of the three sides of the ramp to the nearest thousandth.



49. CREATE Draw a rectangle that has a diagonal twice as long as its width. Then write an equation to find the length of the rectangle.

16	Prove theorems and solve problems about angle bisectors.	7 -13	P 15-16

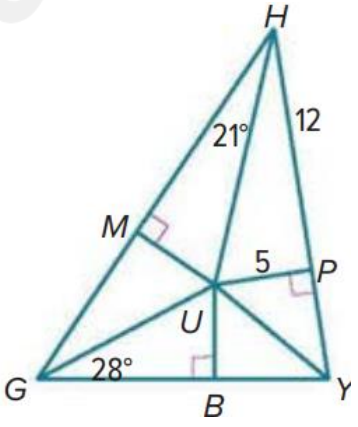
A is the incentre of ΔPQR. Find each measure.



7. m ∠ARU

8. AU

U is the incentre of ΔGHY. Find each measure.



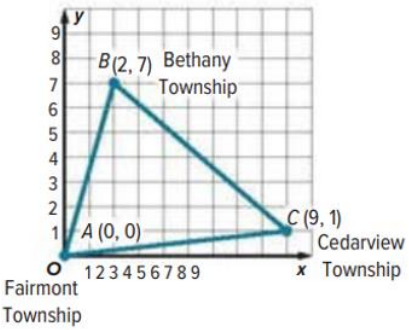
9. m ∠UGM

10. m ∠PHU

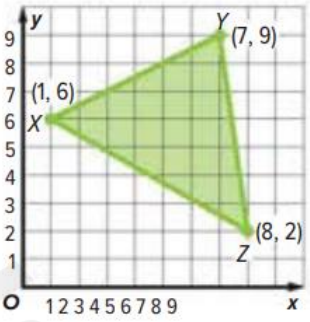
11. HU

12. CITY PLANNING City planning officials want the location of a new electric car charging station to be equidistant from the three townships shown on the coordinate plane. Find the approximate location of the charging station so that it is equidistant from the roads connecting the townships of Fairmont, Bethany, and Cedarview.

يريد مسؤولو تخطيط المدينة أن يكون موقع محطة شحن السيارات الكهربائية الجديدة على مسافة متساوية من البلدات الثلاث الموضحة على المستوى الإحداثي. ابحث عن الموقع التقريبي لمحطة الشحن بحيث تكون على مسافة متساوية من الطرق التي تربط بلدات فيرمونت وبيثاني وسيدارفيو



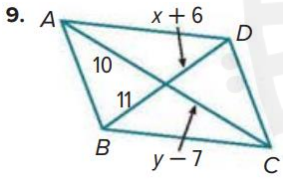
13. SCHOOL The alumni foundation will donate a new fountain for the high school's courtyard. The entrances to the courtyard are located at points X, Y, and Z. Find the approximate location of the center of the fountain so that it is equidistant from the sides of the courtyard.



17	Prove and use theorems about the diagonals of parallelograms	9-14	P 72

Find the value of each variable in each parallelogram.

9.



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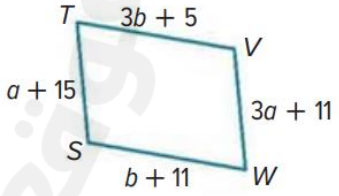
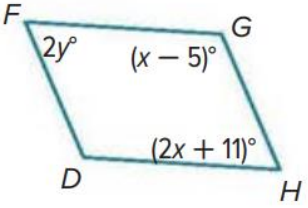


11.



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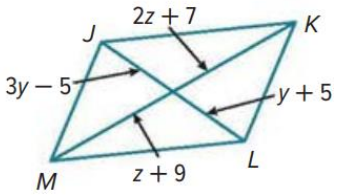
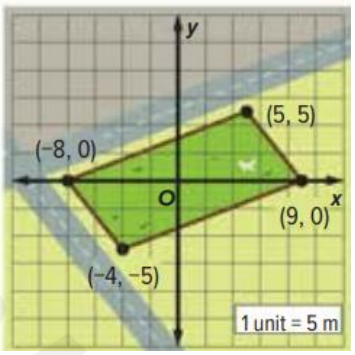
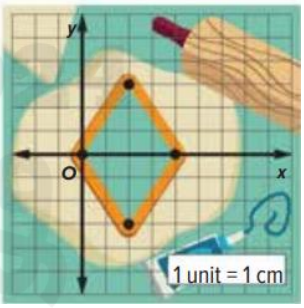


13. PARK A new dog park is being designed by a city planner. The park is enclosed by a fence and shaped like a parallelogram. What is the area and perimeter of the dog park? Round your answers to the nearest hundredth, if necessary.



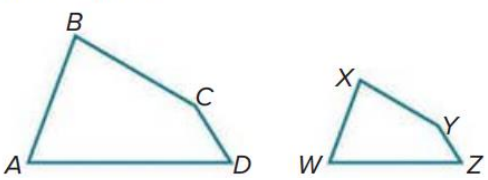
14.STATE YOUR ASSUMPTION Breelyn is making cookies using a cookie cutter in the shape of a parallelogram. What are the perimeter and area of each cookie? Explain any assumptions that you make. Round your answers to the nearest hundredth, if necessary.



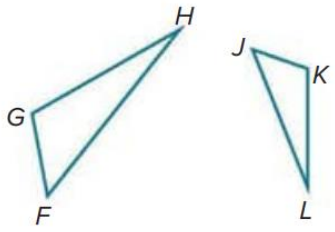
18	Determine whether two figures are similar	1 to 14	P 127-128

List all pairs of congruent angles and write a proportion that relates the corresponding sides for each pair of similar polygons.

1. $ABCD \sim WXYZ$

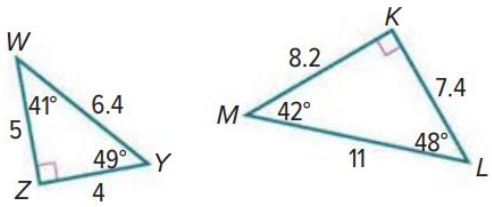


3. $\triangle FGH \sim \triangle JKL$



Determine whether each pair of figures is similar. If so, find the scale factor. Explain your reasoning.

7.



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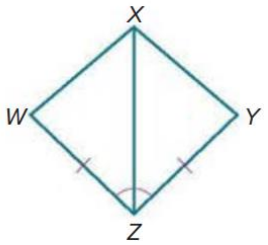

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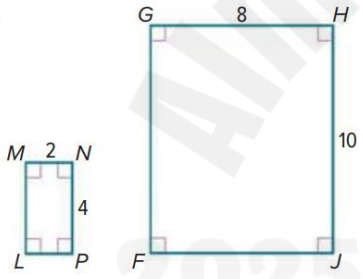
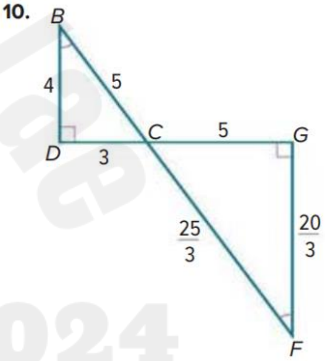
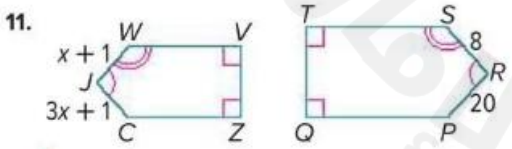


10.



Each pair of polygons is similar. Find the value of x.

11.



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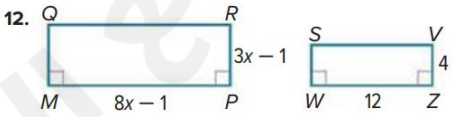

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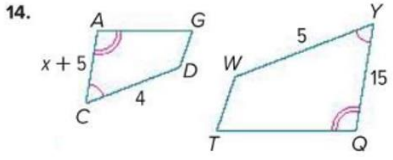
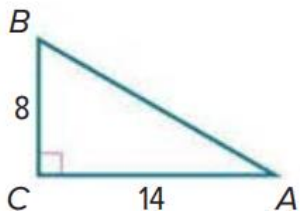


19	•Solve problems by using the trigonometric ratios for acute angles. •Solve problems by using the inverse trigonometric ratios for acute angles. Use the	16-27	P 191-192
	•Pythagorean Theorem to solve problems involving right triangles	1-12	P 171

Use a calculator to find m ∠B to the nearest tenth.

16.



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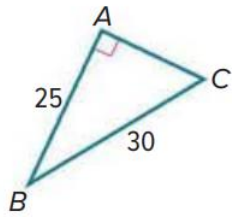

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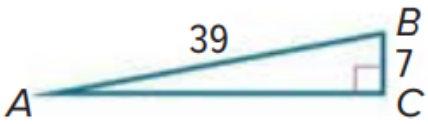
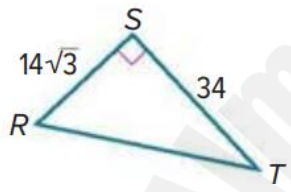


Use a calculator to find m ∠T to the nearest tenth.

19.



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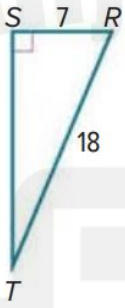

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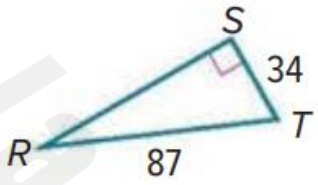
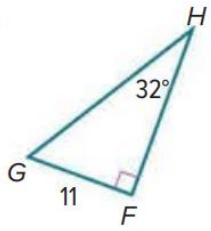


Solve each right triangle. Round side measures to the nearest tenth and angle measures to the nearest degree.

22.



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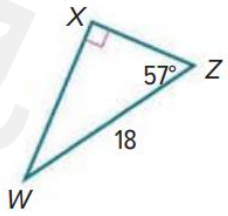

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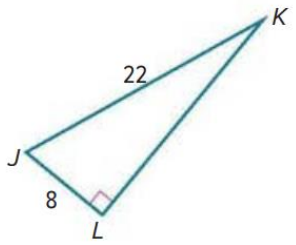

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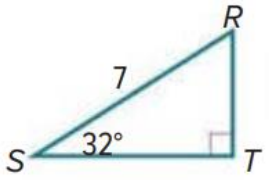

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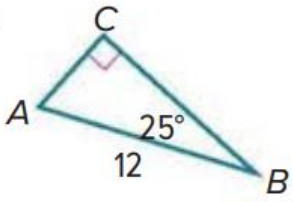

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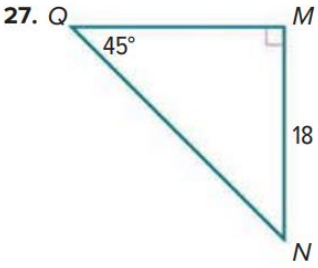
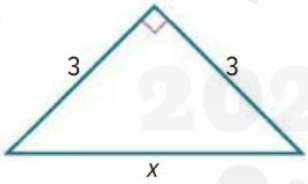
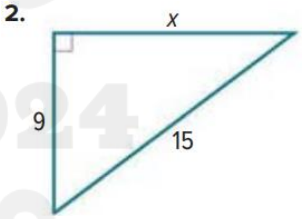


Find the value of x.

1.



2.



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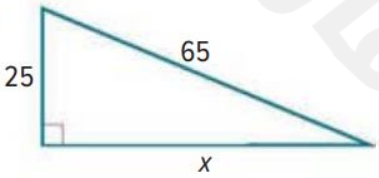

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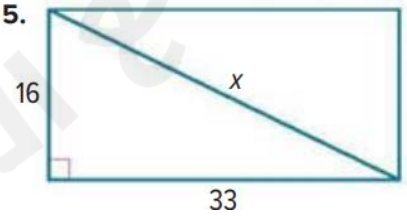

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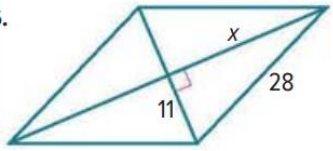
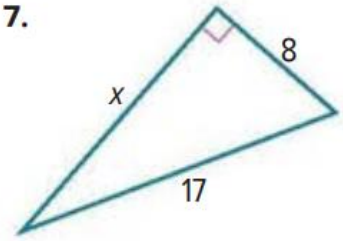


Use a Pythagorean Triple to find the value of x.

7.



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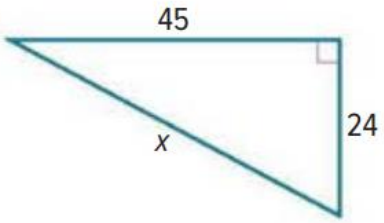

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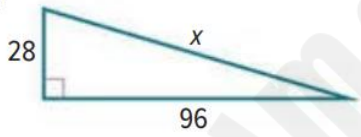

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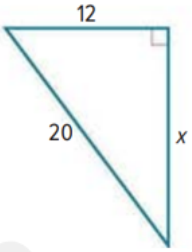
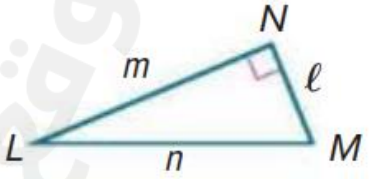


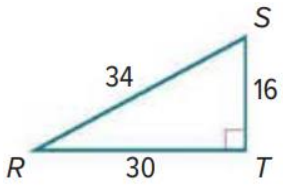
20	Solve problems by using the trigonometric ratios for acute angles	1 to 15	191

Find sin L, cos L, tan L, sin M, cos M, and tan M. Express each ratio as a fraction and as a decimal to the nearest hundredth.

1. ℓ = 15, m = 36, n = 39



3. Find sin R, cos R, tan R, sin S, cos S, and tan S. Express each ratio as a fraction and as a decimal to the nearest hundredth.



Use a special right triangle to express each trigonometric ratio as a fraction and as a decimal to the nearest hundredth if necessary.

5. sin 30°

6. tan 45°

7. cos 60°

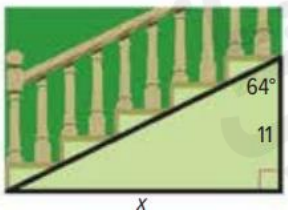
8. sin 60°

9. tan 30°

10. cos 45°

Find the value of x. Round to the nearest hundredth.

11.



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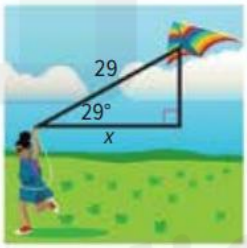

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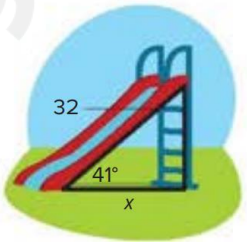
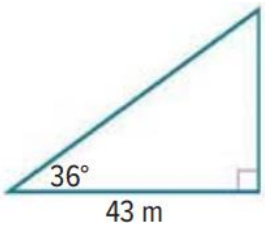


14. GEOLOGY Shan used a surveying tool to map a region of land for his science class. To determine the height of a vertical rock formation, he measured the distance from the base of the formation to his position and the angle between the ground and the line of sight to the top of the formation. The distance was 43 meters, and the angle was 36°. What is the height of the formation to the nearest meter?



الجيولوجيا استخدم شان أداة مسح لرسم خريطة لمنطقة من الأرض لفصله العلمي. لتحديد ارتفاع تكوين صخري عمودي، قام بقياس المسافة من قاعدة التكوين إلى موقعه والزاوية بين الأرض وخط البصر إلى قمة التكوين. كانت المسافة 43 مترًا، وكانت الزاوية 36 درجة. ما ارتفاع التكوين إلى أقرب متر؟

15. RAMPS A 60-foot ramp rises from the first floor to the second floor of a parking garage. The ramp makes a 15° angle with the ground. How high above the first floor is the second floor? Express your answer to the nearest tenth of a foot.

يرتفع منحدر طوله 60 قدمًا من الطابق الأول إلى الطابق الثاني في مرآب للسيارات. يشكل المنحدر زاوية مقدارها 15 درجة مع الأرض. ما مدى ارتفاع الطابق الثاني عن الطابق الأول؟ أوجد إجابتك لأقرب جزء من عشر قدم