GEOMETRY CP SPRING REVIEW

7-1

Solve each proportion by using cross products.

5. $\frac{9}{28} = \frac{x}{84}$

6. $\frac{3}{18} = \frac{4x}{7}$

7. $\frac{x+5}{7} = \frac{x+3}{5}$

Use a proportion to solve each problem.

8. If two cassettes cost $14.50, how much will 15 cassettes cost?

9. If a 6-foot post casts a shadow that is 8 feet long, how tall is an antenna that casts a 60-foot shadow at the same time?
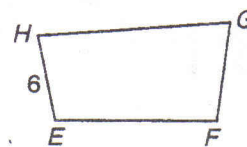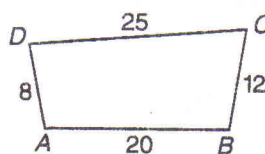

7-2

If quadrilateral ABCD is similar to quadrilateral EFGH, find each of the following.
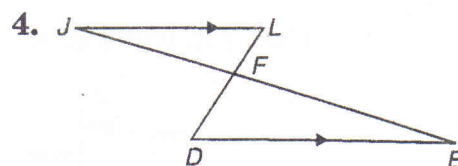
1. scale factor of *ABCD* to *EFGH*

2. *EF*

3. *FG*

4. *GH*

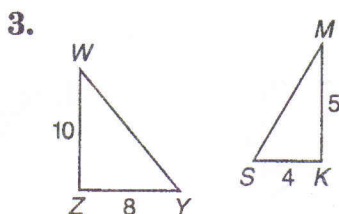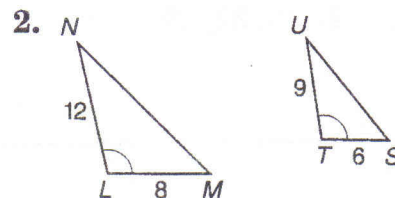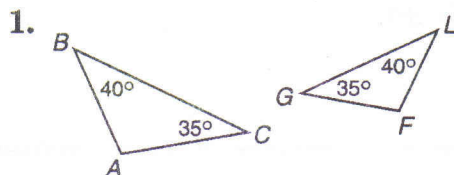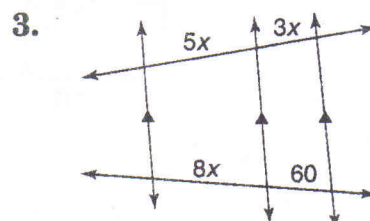

7-3

Determine whether each pair of triangles is similar. Give a reason for your answer.

1.

2.

3.

4.

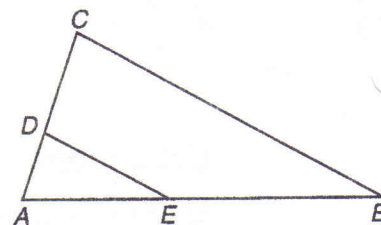---

7-4

Find the value of x.

1.

2.

3.
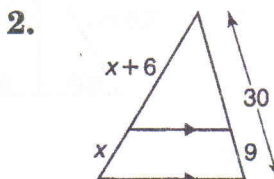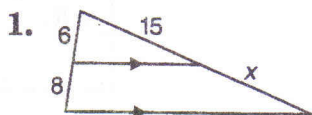
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7-4

In △ABC, find x so that $\overline{DE} \parallel \overline{CB}$.

4. $DC = 18$, $AD = 6$,
   $AE = 12$, $EB = x - 3$

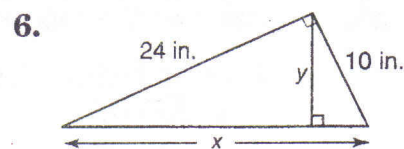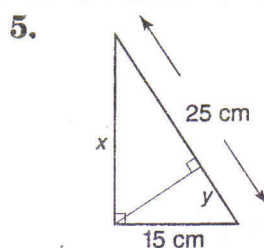5. $AC = 30$, $AD = 10$,
   $AE = 22$, $EB = x + 4$

Find the geometric mean between each pair of numbers.

1. 3 and 10

2. 10 and 20

Find the values of x and y. Round to the nearest tenth.

8-1

4.

7 m, 4 m, x

5.

25 cm, x, y, 15 cm

6.

24 in., y, 10 in., x

8-2
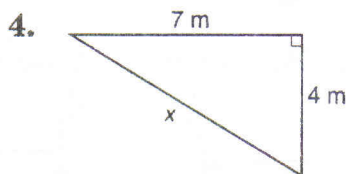
Determine if the given measures are measures of the sides of a right triangle.

7. 18, 24, 30

8. 20, 30, 40

Find the value of x.

8-3

1.

12 mm, 45°, x mm, 45°

2.

30°, 24 mm, 60°, x

3.

45°, x, 45°, 12 in.

4.

60°, 18 ft, 30°, x ft

5.

3.8 cm, x cm, 60°, 60°

6.

x ft, 20 ft

GEOMETRY CP SPRING REVIEW

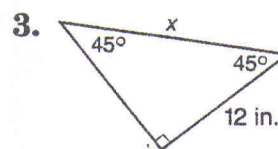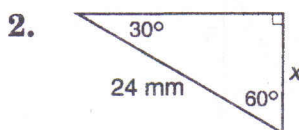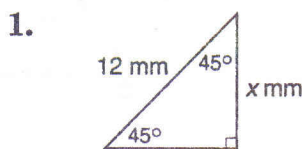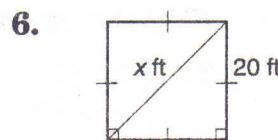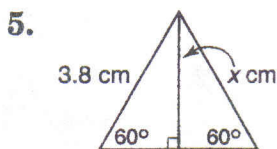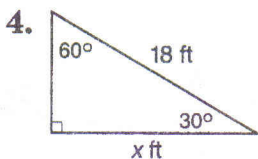**Find the indicated trigonometric ratio as a fraction and as a decimal rounded to the nearest ten-thousandth.**
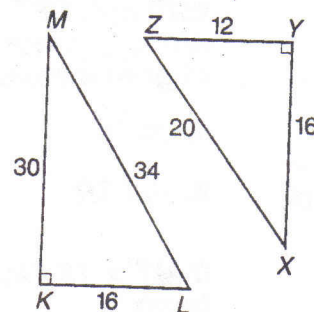
8-4

1. $\sin M$

2. $\cos Z$

3. $\tan L$

4. $\sin X$

Find the value of each ratio to the nearest ten-thousandth.

7. $\sin 12°$

8. $\cos 32°$

8-5

Solve each problem. Round measures of segments to the nearest hundredth and measures of angles to the nearest degree.

1. From the top of a tower, the angle of depression to a stake on the ground is 72°. The top of the tower is 80 feet above ground. How far is the stake from the foot of the tower?

2. A tree 40 feet high casts a shadow 58 feet long. Find the measure of the angle of elevation of the sun.

10-1

Refer to ⊙S for Exercises 1–6.

1. Name the center of ⊙S.

2. Name three radii of ⊙S.

3. Name a diameter.

4. Name a chord.

5. If $RT = 8.2$, find SM.

6. Is $\overline{SR} \cong \overline{SM}$? Explain.
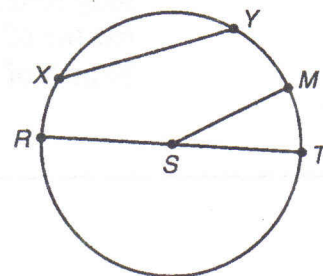
In Exercises 7–10, the radius, diameter, or circumference of a circle is given. Find the other measures to the nearest tenth.

7. $r = 7, d = \underline{?}, C = \underline{?}$

8. $d = 32.4, r = \underline{?}, C = \underline{?}$

9. $C = 116.5, d = \underline{?}, r = \underline{?}$

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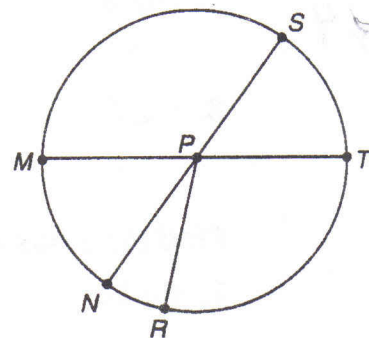**Refer to ⊙P for Exercises 1–8. If $\overline{SN}$ and $\overline{MT}$ are diameters with m∠ SPT = 51 and m∠ NPR = 29, determine whether each arc is a minor arc, a major arc, or a semicircle. Then find the degree measure of each arc.**

10-2

1. m$\widehat{NR}$ 2. m$\widehat{ST}$

3. m$\widehat{TSR}$ 4. m$\widehat{MST}$
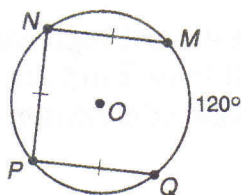
If MT = 15, find the length of each arc. Round to the nearest tenth.

5. $\widehat{NR}$ 6. $\widehat{ST}$

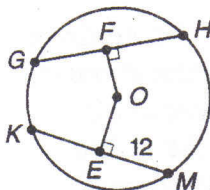7. $\widehat{TSR}$ 8. $\widehat{MST}$

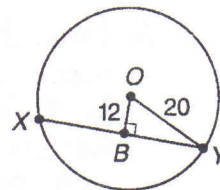**In each circle, O is the center. Find each measure.**

10-3

1. m$\widehat{NP}$ 2. KM   3. XY

4. Suppose a chord is 20 inches long and is 24 inches from the center of the circle. Find the length of the radius.

5. Suppose a chord of a circle is 5 inches from the center and is 24 inches long. Find the length of the radius.

10-4

In ⊙P, m$\widehat{SV}$ = 86 and m∠ RPS = 110. Find each measure.

4. m∠ PRS   5. m$\widehat{RT}$ 6. m∠ RVT   7. m∠ SVT

8. m∠ TQV   9. m∠ RQT   10. m∠ QRT   11. m$\widehat{RS}$
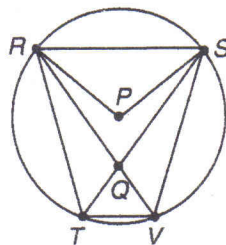
For each ⊙C, find the value of x. Assume that segments that appear to be tangent are tangent.

10-5

1.

C 19

x

2.

20

15

C x

3.

x

C

14

4.

C

30

x

40   40

5.

C

21

8

x

6.

8

C

x
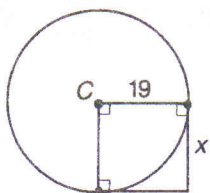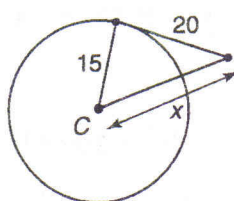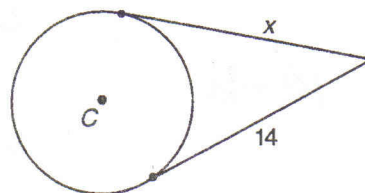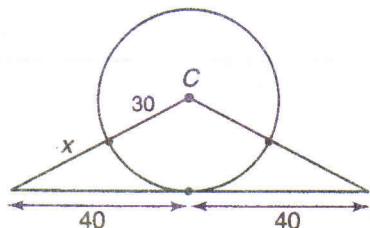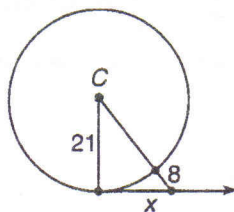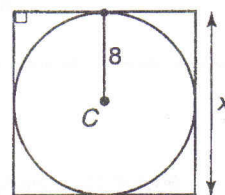
Find the measure of each numbered angle.

10-6

1.

52°   1   40°

2.

2

134°

3.

110°

100°

3

80°
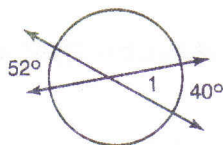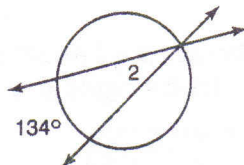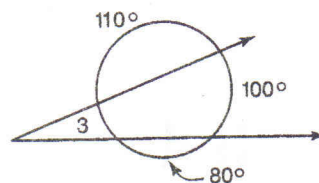
Given ⊙T, find the value of x.

4.

130°

100° T

x°

5.

T•   x°   50°

6.

20°

x° T

70°
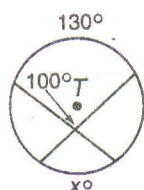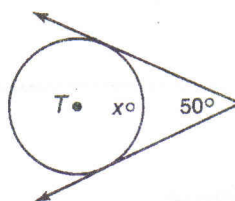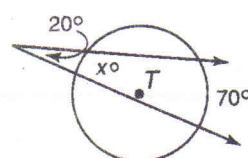
Find the value of x to the nearest tenth. Assume segments that appear tangent to be tangent.

10-7

1.

8

x

6

3

2.

8

6

2x

3.

x

7.3   5.2

4.

3x 6

x

8

5.

4

6

x

7

6.

16

14

x + 2

(#5)
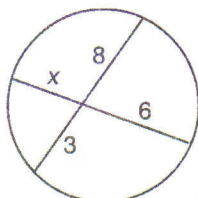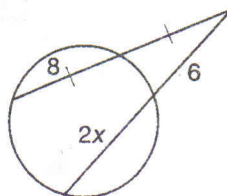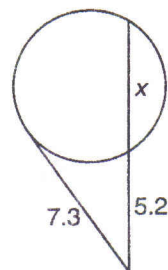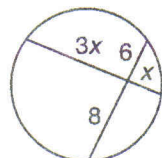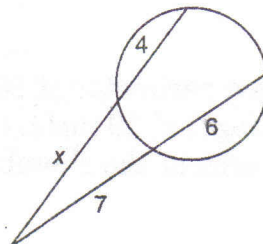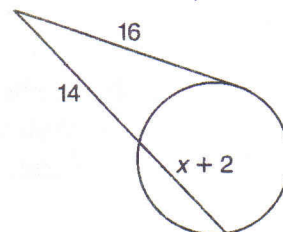
Determine the coordinates of the center and the measure of the radius for each circle whose equation is given.

1. $(x - 7.2)^2 + (y + 3.4)^2 = 14.44$

2. $\left(x + \frac{1}{2}\right)^2 + (y - 2)^2 = \frac{16}{25}$

10-8

3. $(x - 6)^2 + (y - 3)^2 - 25 = 0$

Graph each circle whose equation is given. Label the center and measure of the radius on each graph.

4. $(x - 2.5)^2 + (y + 1)^2 = 12.25$

Find the area of each figure.

1.
19 m
15 m

2.
6.5 in.
13.5 in.

11-1
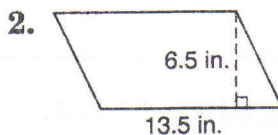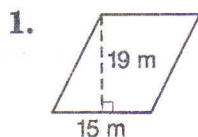
Find the area of each shaded region. Assume that angles that appear to be right are right angles.

4.
7 m   22 m
12 m
48 m

5.
6 in.   2 in.
8 in.   2 in.
7 in.
2 in.

11-2

Find the area of each figure.

1.
19 in.
26 in.

2.
20 mm
8 mm
24 mm

3.
10 m   12 m
12 m
10 m

4.
10 m
12 m

5.
24 m
9 m

6.
10 cm
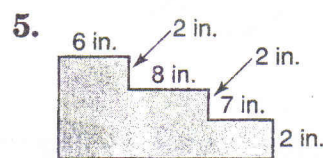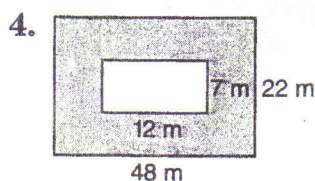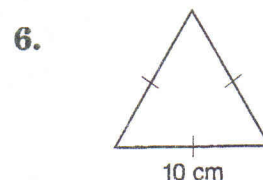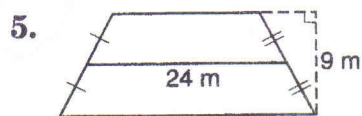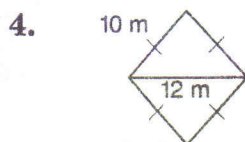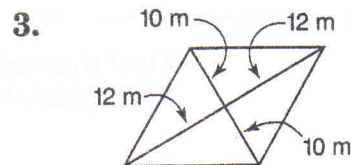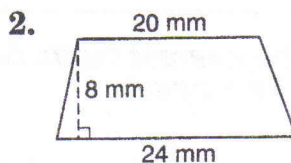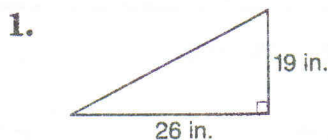
8. A rhombus has a perimeter of 100 meters and a diagonal 30 meters long. Find the area of the rhombus.

Find the apothem, area, and perimeter of each regular polygon. Round your answers to the nearest tenth.

11-3

1.

14 m

2.

15 in.

3.

10 m
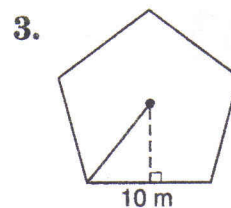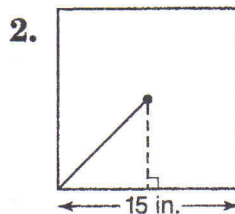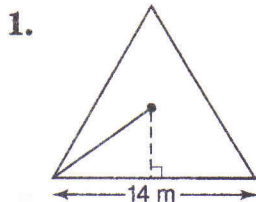
Find the area of each shaded region. Assume that all polygons are regular. Round your answers to the nearest tenth.

6.

40 m

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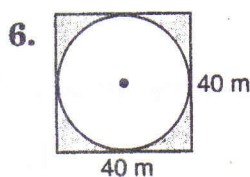
Find the area of each figure. Round to the nearest tenth if necessary.

11-4

1.

5

12

20

2.

3

7

3.

8

8

4.

15

30
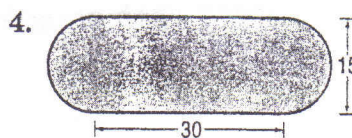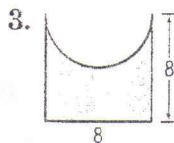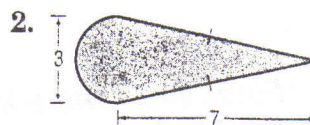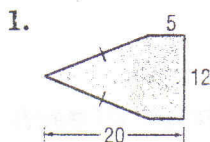
Find the probability that a point chosen at random in each figure lies in the shaded region. Round your answers to the nearest hundredth.

ᴄ-5

5.

8   8

6

6

6   6

8   8

6.

12

12

7.

120°

9
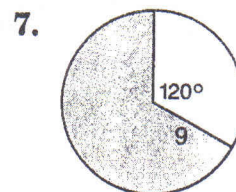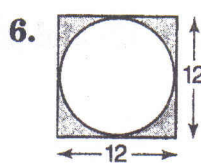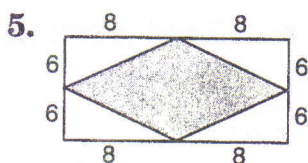
Find the surface area of each solid. Round to the nearest tenth.

1.
4 in
4 in
4 in.
10 in.

2.
4 cm
9 cm

3.
ℓ=17m
15 m
15 m

4.
4 m 3 m
5 m
5 m

5.
4 ft
2 ft

6.
8 in.
12 in.
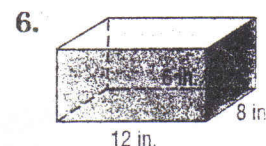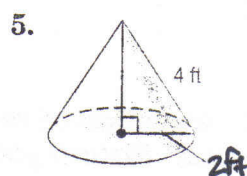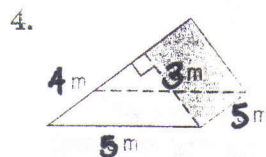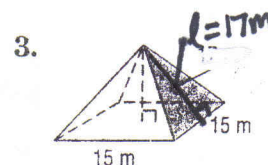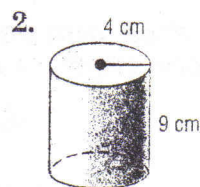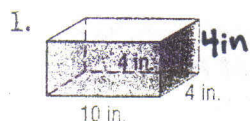
Find the volume of each solid. Round to the nearest tenth.

7.
5 cm
2 cm.

8.
3 in
3 in.
3 in.

9.
2 m
1 m
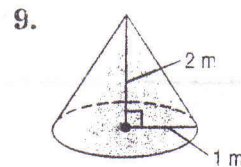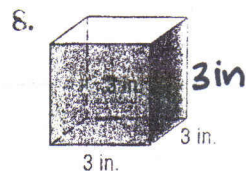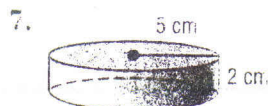
1. Find the image of $\overline{UV}$ with $U(-3, 5)$ and $V(0, 8)$ under the translation $(x, y) \to (x + 2, y - 5)$.

2. Find the image of $\overline{CD}$ with $C(0, 4)$ and $D(3, 4)$ under a rotation of 90° counterclockwise about the origin.

3. Find the coordinates of Q'' if $\triangle OPQ$ with $O(4, 2)$, $P(5, 0)$, and $Q(1, -2)$ is reflected in the x-axis and then in the y-axis.

4. Determine whether a regular 15-gon tessellates the plane. Explain.

5. If $CD = 3$ and $C''D'' = 8$, is the dilation an *enlargement, reduction,* or *congruence transformation?*

1) In the accompanying diagram, parallel lines *l* and *m* are cut by transversal *t*.
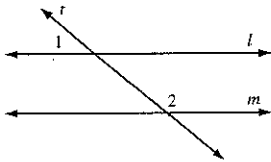
Which statement about angles 1 and 2 *must* be true?

A $\angle 1 \cong \angle 2$.

B $\angle 1$ is the complement of $\angle 2$.

C $\angle 1$ is the supplement of $\angle 2$.

D $\angle 1$ and $\angle 2$ are right angles.

2) Which of the following statements must be true if $\triangle GHI \sim \triangle JKL$?
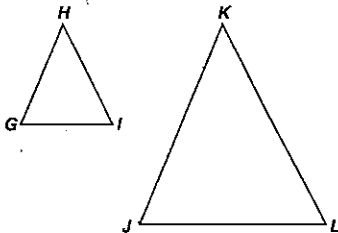
A   The two triangles must be scalene.

B   The two triangles must have exactly one acute angle.

C   At least one of the sides of the two triangles must be parallel.

D   The corresponding sides of the two triangles must be proportional.

3) Students in a class rewrote theorems in their own words. One student wrote the following statement.

The area of a parallelogram is the product of any base (*b*) and any height (*h*).

Which figure shows a counterexample to prove the statement *false*?

A

B

C

D
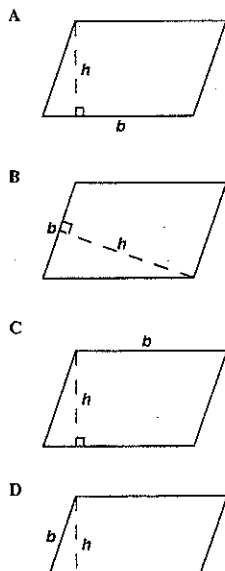
4) What type of triangle is formed by the points $A(4,2)$, $B(6,-1)$, and $C(-1,3)$?

A   right

B   equilateral

C   isosceles

D   scalene

5) A conditional statement is shown below.

If a quadrilateral has perpendicular diagonals, then it is a rhombus.

Which of the following is a counterexample to the statement above?

A

C

B

D
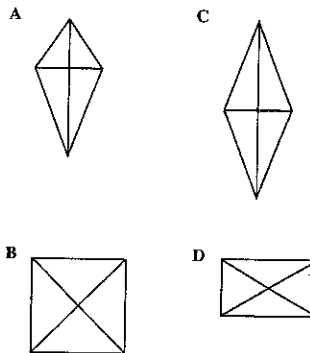
6) A regular polygon has 12 sides. What is the measure of each exterior angle?

A   15°

B   30°

C   45°

D   60°

7) Given: $\overline{AB}$ and $\overline{CD}$ intersect at point *E*; $\angle 1 \cong \angle 2$
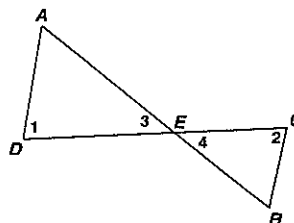
Which theorem or postulate can be used to prove $\triangle AED \sim \triangle BEC$?

A   AA

B   SSS

C   ASA

D   SAS

8) Two angles of a triangle have measures of 55° and 65°. Which of the following could *not* be a measure of an exterior angle of the triangle?

A   115°

B   120°

C   125°

D   130°

9) In the figure below, $\overline{AC} \cong \overline{DF}$ and $\angle A \cong \angle D$.
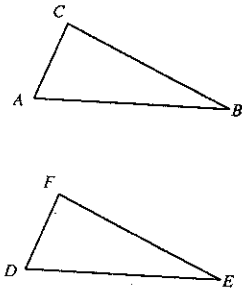
Which additional information would be enough to prove that $\triangle ABC \cong \triangle DEF$?

A $\overline{AB} \cong \overline{DE}$

B $\overline{AB} \cong \overline{BC}$

C $\overline{BC} \cong \overline{EF}$

D $\overline{BC} \cong \overline{DE}$

10) What is $m\angle WZX$?

A   80°

B   90°
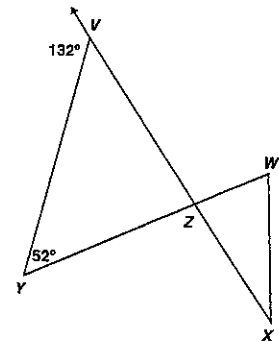
C   100°

D   110°

11) Which method listed below could *not* be used to prove that two triangles are congruent?

A   Prove all three sets of corresponding sides congruent.

B   Prove all three sets of corresponding angles congruent.

C   Prove that two sides and an included angle of one triangle are congruent to two sides and an included angle of the other triangle.

D   Prove that two angles and an included side of one triangle are congruent to two angles and an included side of the other triangle.

12) In parallelogram $FGHI$, diagonals $\overline{IG}$ and $\overline{FH}$ are drawn and intersect at point *M*. Which of the following statements *must* be true?

A $\triangle FGI$ must be an obtuse triangle.

B $\triangle HIG$ must be an acute triangle.

C $\triangle FMG$ must be congruent to $\triangle HMG$.

D $\triangle GMH$ must be congruent to $\triangle IMF$.

3) Scott is constructing a line perpendicular to line *l* from point *P*. Which of the following should be his first step?

A

B

C

D
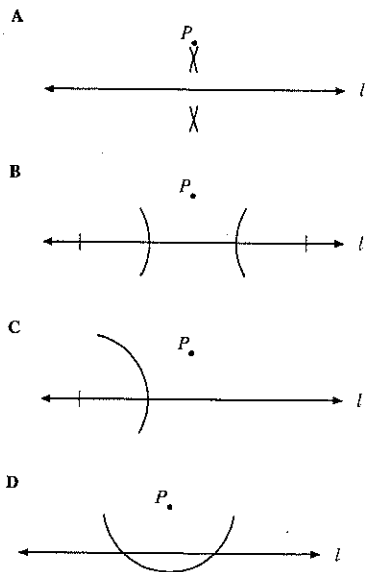
1) In the circle below, $\overline{AB}$ and $\overline{CD}$ are chords intersecting at *E*.
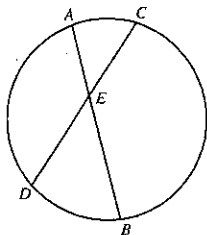
If $AE = 5$, $BE = 12$, and $CE = 6$, what is the length of $\overline{DE}$?

A   7
B   9
C   10
D   13

5) In the figure below, $AB > BC$.
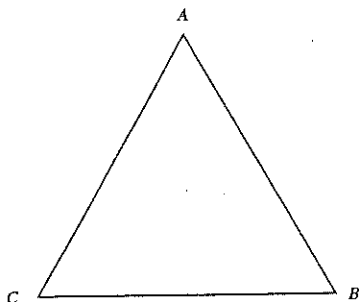
If we assume that $m\angle A = m\angle C$, it follows that $AB = BC$. This contradicts the given statement that $AB > BC$. What conclusion can be drawn from this contradiction?

A $m\angle A = m\angle B$
B $m\angle A \neq m\angle B$
C $m\angle A = m\angle C$

16) If *ABCD* is a parallelogram, what is the length of segment *BD*?

A   10
B   11
C   12
D   14

CSG20036
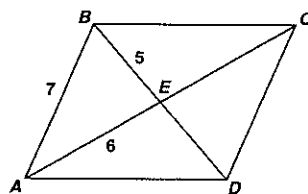
17) Given: *TRAP* is an isosceles trapezoid with diagonals $\overline{RP}$ and $\overline{TA}$. Which of the following *must* be true?

A $\overline{RP} \perp \overline{TA}$
B $\overline{RP} \parallel \overline{TA}$
C $\overline{RP} \cong \overline{TA}$
D $\overline{RP}$ bisects $\overline{TA}$

CSG00340

18) Given: $p \parallel q$;
$m \parallel n$;
$m\angle 1 = 75°$
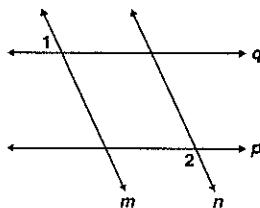
What is $m\angle 2$?

A   15°
B   75°
C   90°
D   105°

19) What is the value of *x*, in inches?

7 In.

30°

x
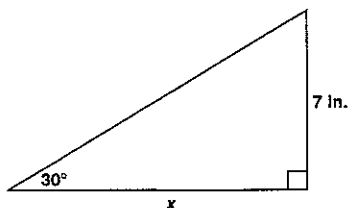
A $7\sqrt{3}$
B   14
C $14\sqrt{3}$
D   21

20) Trapezoid *ABCD* below is to be translated to trapezoid *A'B'C'D'* by the following motion rule.

$$(x, y) \rightarrow (x + 3, y - 4)$$
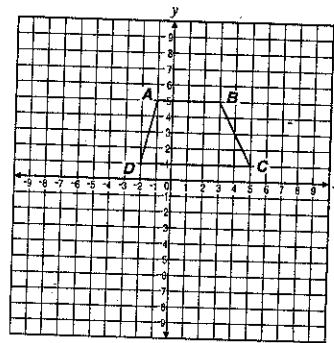
What will be the coordinates of vertex *C'*?

A $(1, -3)$
B $(2, 1)$
C $(6, 1)$
D $(8, -3)$

21) The sum of the interior angles of a polygon is the same as the sum of its exterior angles. What type of polygon is it?

A   quadrilateral
B   hexagon
C   octagon
D   decagon

CSG00305

22) A diagram from a proof of the Pythagorean theorem is pictured below.
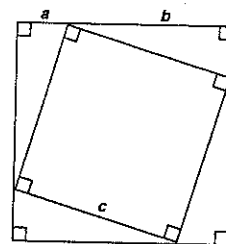
Which statement would *not* be used in the proof of the Pythagorean theorem?

A   The area of a triangle equals $\frac{1}{2}ab$.
B   The four right triangles are congruent.
C   The area of the inner square is equal to half of the area of the larger square.
D   The area of the larger square is equal to the sum of the areas of the smaller square and the four congruent triangles.

3) Figure *ABCO* is a parallelogram.
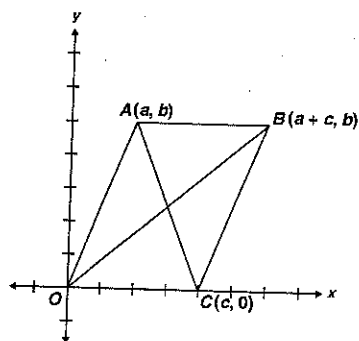
What are the coordinates of the point of intersection of the diagonals?

A $\left(\dfrac{a}{2}, \dfrac{b}{2}\right)$

B $\left(\dfrac{c}{2}, \dfrac{b}{2}\right)$

C $\left(\dfrac{a+c}{2}, \dfrac{b}{2}\right)$

D $\left(\dfrac{a+c}{2}, \dfrac{a+b}{2}\right)$

---

1) Given: angle *A*

What is the first step in constructing the angle bisector of angle *A*?
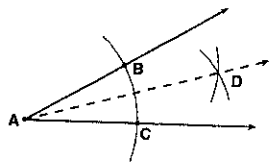
A Draw ray $\overrightarrow{AD}$.

B Draw a line segment connecting points *B* and *C*.

C From points *B* and *C*, draw equal arcs that intersect at *D*.

D From point *A*, draw an arc that intersects the sides of the angle at points *B* and *C*.

---

5) What is the approximate height, in feet, of the tree in the figure below?

100 ft

50°
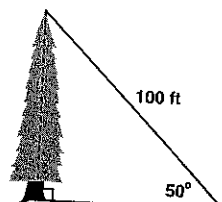
$$\sin 50° \approx 0.766$$
$$\cos 50° \approx 0.643$$
$$\tan 50° \approx 1.192$$

A 64.3
B 76.6
C 119.2
D 130.5

---

26) In the accompanying diagram, $m\angle A = 32°$ and $AC = 10$. Which equation could be used to find *x* in $\triangle ABC$?
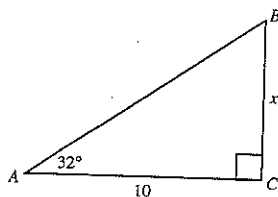
A $x = 10 \sin 32°$

B $x = 10 \cos 32°$

C $x = 10 \tan 32°$

D $x = \dfrac{10}{\cos 32°}$

---

27) $\overline{QS}$ is a diameter of the circle below, and $\overline{QS} \perp \overline{PR}$.
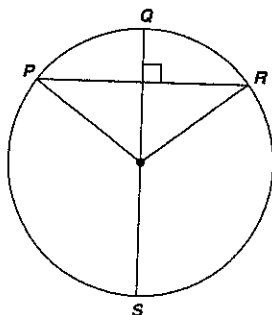
If $m\widehat{PQR} = 106°$, what is $m\widehat{PS}$?

A 53°
B 74°
C 106°
D 127°

---

28) In the diagram below, $\angle 1 \cong \angle 4$.

Which of the following conclusions does *not* have to be true?

A $\angle 3$ and $\angle 4$ are supplementary angles.
B Line *l* is parallel to line *m*.
C $\angle 1 \cong \angle 3$
D $\angle 2 \cong \angle 3$

---

29) Which triangle can be constructed using the following steps?

1. Put the tip of the compass on point *A*.
2. Open the compass so that the pencil tip is on point *B*.
3. Draw an arc above $\overline{AB}$.
4. Without changing the opening, put the metal tip on point *B* and draw an arc intersecting the first arc at point *C*.
5. Draw $\overline{AC}$ and $\overline{BC}$.

A right
B obtuse
C scalene
D equilateral

30) Use the proof to answer the question below.

Given: $\angle 2 \cong \angle 3$

Prove: $\angle 1 \cong \angle 4$
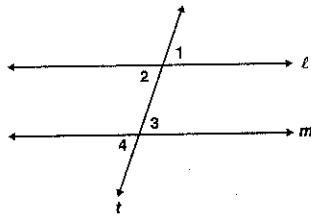
Statement	Reason
1. $\angle 2 \cong \angle 3$	1. Given
2. $\angle 1 \cong \angle 2; \angle 3 \cong \angle 4$	2. ?
3. $\angle 1 \cong \angle 4$	3. Transitive Property

What reason can be used to justify statement 2?

A Complements of congruent angles are congruent.

B Vertical angles are congruent.

C Supplements of congruent angles are congruent.

D Corresponding angles are congruent.

31) Use the proof to answer the question below.

Given: $\overline{AB} \cong \overline{BC}$; D is the midpoint of $\overline{AC}$

Prove: $\triangle ABD \cong \triangle CBD$
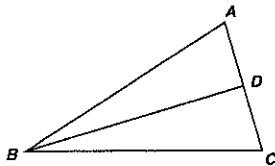
Statement	Reason
1. $\overline{AB} \cong \overline{BC}$; D is the midpoint of $\overline{AC}$	1. Given
2. $\overline{AD} \cong \overline{CD}$	2. Definition of Midpoint
3. $\overline{BD} \cong \overline{BD}$	3. Reflexive Property
4. $\triangle ABD \cong \triangle CBD$	4. ?

What reason can be used to prove that the triangles are congruent?

A AAS

B ASA

C SAS

D SSS

32) Which figure can serve as a counterexample to the conjecture below?

If one pair of opposite sides of a quadrilateral is parallel, then the quadrilateral is a parallelogram.

A rectangle

B rhombus

C square

D trapezoid

33) Which expression describes the translation of a point from $(-3, 4)$ to $(4, -1)$?
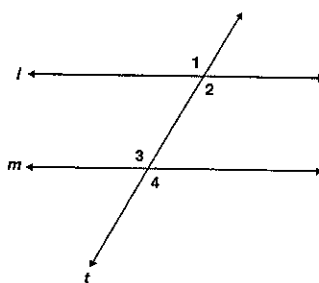
A 7 units left and 5 units up

B 7 units right and 5 units up

C 7 units left and 5 units down

D 7 units right and 5 units down

34) Which of the following sets of numbers could represent the lengths of the sides of a triangle?

A 2, 2, 5

B 3, 3, 5

C 4, 4, 8

D 5, 5, 15

35) Quadrilateral $ABCD$ is a parallelogram. If adjacent angles are congruent, which statement must be true?

A Quadrilateral $ABCD$ is a square.

B Quadrilateral $ABCD$ is a rhombus.

C Quadrilateral $ABCD$ is a rectangle.

D Quadrilateral $ABCD$ is an isosceles trapezoid.

36) In the figure below, $\overrightarrow{AB}$ is tangent to circle O at point A, secant $\overline{BD}$ intersects circle O at points C and D, $m\widehat{AC} = 70°$, and $m\widehat{CD} = 110°$.
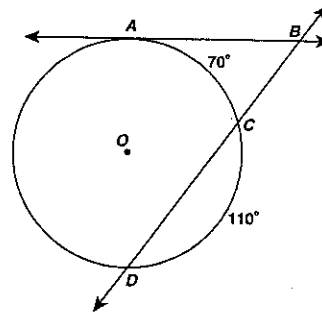
What is $m\angle ABC$?

A 20°

B 40°

C 55°

D 70°

37) A right triangle's hypotenuse has length 5. If one leg has length 2, what is the length of the other leg?

A 3

B $\sqrt{21}$

C $\sqrt{29}$

D 7

38) Consider the arguments below.

I. Every multiple of 4 is even. 376 is a multiple of 4. Therefore, 376 is even.

II. A number can be written as a repeating decimal if it is rational. Pi cannot be written as a repeating decimal. Therefore, pi is not rational.

Which one(s), if any, use deductive reasoning?

A I only

B II only

C both I and II

D neither I nor II

39) In the figure below, $\overline{AB} \parallel \overline{CD}$.
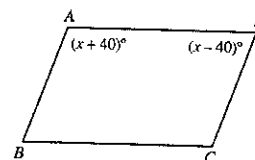
What is the value of x?

A 40

B 50

C 80

D 90

10) A 13-foot ladder is leaning against a brick wall. The top of the ladder touches the wall 12 feet (ft) above the ground. The bottom of the ladder is 5 ft from the bottom of the wall. What is the sine of the angle formed by the ground and the base of the ladder?

13 ft ladder / wall 12 ft / 5 ft

A $\dfrac{5}{12}$
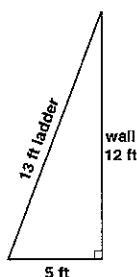
B $\dfrac{5}{13}$

C $\dfrac{12}{13}$

D $\dfrac{13}{5}$

11) Which of the following best describes deductive reasoning?

A using logic to draw conclusions based on accepted statements

B accepting the meaning of a term without definition

C defining mathematical terms to correspond with physical objects

D inferring a general truth by examining a number of specific examples
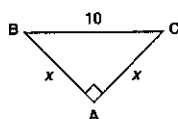
CSG00185

12) If triangle ABC is rotated 180 degrees about the origin, what are the coordinates of A'?

A $(-5,-4)$

B $(-5,4)$

C $(-4,5)$

D $(-4,-5)$
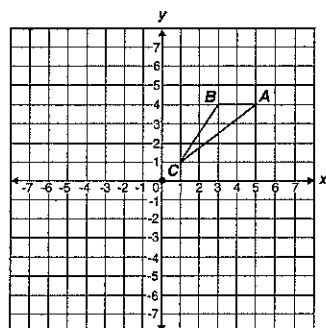
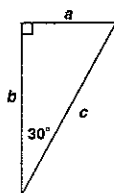**13)** What is the value of x in the triangle below?

B —— 10 —— C / x x / A

A 5

B $5\sqrt{2}$

C $10\sqrt{3}$

44) If $a = 3\sqrt{3}$ in the right triangle below, what is the value of b?
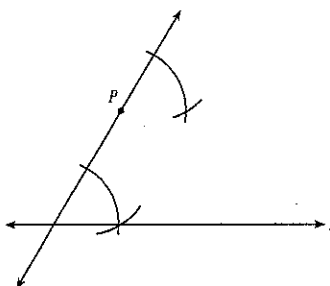

a / b / 30° / c

A 9

B $6\sqrt{3}$

C $12\sqrt{3}$

D 18

CSG00012

45) Marsha is using a straightedge and compass to do the construction shown below.

P / l

Which best describes the construction Marsha is doing?

A a line through P parallel to line l

B a line through P intersecting line l

C a line through P congruent to line l

D a line through P perpendicular to line l

CSG00526

46) The point $(-3, 2)$ lies on a circle whose equation is $(x+3)^2 + (y+1)^2 = r^2$. Which of the following must be the radius of the circle?

A 3

B $\sqrt{10}$

C 9

D 10

47) The diameter of a circle is 12 meters. If point P is in the same plane as the circle, and is 6 meters from the center of the circle, which best describes the location of point P?

A Point P must be on the circle.

B Point P must be inside the circle.

C Point P may be either outside the circle or on the circle.

D Point P may be either inside the circle or on the circle.

48)

C / c° / B 95° / 32° D / a° / A
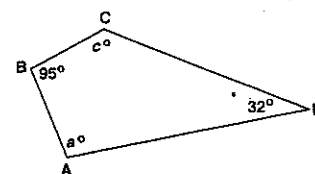
A 53°

B 137°

C 180°

D 233°

49) In the circle shown below, the measure of $\overparen{PR} = 140°$ and the measure of $\angle RPQ = 50°$.

140° / 50° / P / O / R / Q
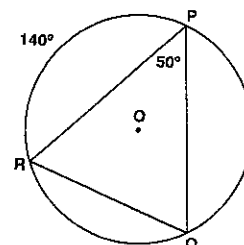
What is the measure of $\overparen{PQ}$?

A 50°

B 60°

C 70°

D 120°

50) What is $m\angle 1$?

36° / 88° / 1
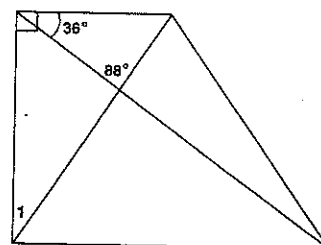
A 34°

B 56°

C 64°

D 92°

51) In the figure below, n is a whole number. What is the smallest possible value for n?

n / n / 15
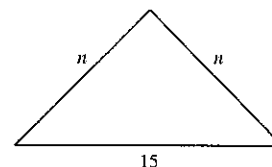
A 1

B 7

C 8

D 14

52) Theorem: A triangle has at most one obtuse angle.

Eduardo is proving the theorem above by contradiction. He began by assuming that in $\triangle ABC$, $\angle A$ and $\angle B$ are both obtuse. Which theorem will Eduardo use to reach a contradiction?

A If two angles of a triangle are equal, the sides opposite the angles are equal.

B If two supplementary angles are equal, the angles each measure 90°.

C The largest angle in a triangle is opposite the longest side.

D The sum of the measures of the angles of a triangle is 180°.
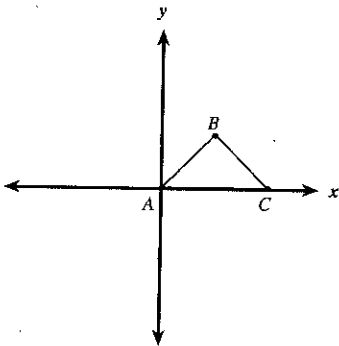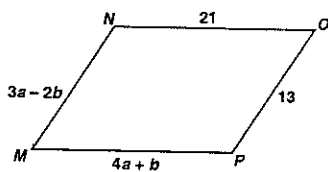
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53) The diagram shows $\triangle ABC$.

Which statement would prove that $\triangle ABC$ is a right triangle?

A $\left(\text{slope } \overline{AB}\right)\left(\text{slope } \overline{BC}\right) = 1$

B $\left(\text{slope } \overline{AB}\right)\left(\text{slope } \overline{BC}\right) = -1$

C distance from A to B = distance from B to C

D distance from A to B = $-$ (distance from B to C)

---

54) What values of a and b make quadrilateral $MNOP$ a parallelogram?

A $a = 1, b = 5$

B $a = 5, b = 1$

C $a = \dfrac{11}{7}, b = \dfrac{34}{7}$
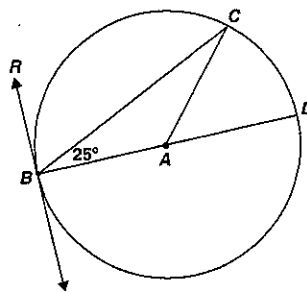
D $a = \dfrac{34}{7}, b = \dfrac{11}{7}$

---

55) The measures of the interior angles of a pentagon are $2x, 6x, 4x - 6, 2x - 16$, and $6x + 2$. What is the measure, in degrees, of the largest angle?

A 28

B 106

C 170

D 174

---

56) $\overline{RB}$ is tangent to a circle, whose center is A, at point B. $\overline{BD}$ is a diameter.

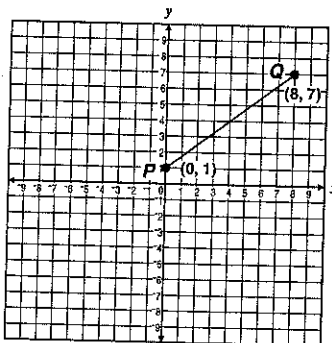What is $m\angle CBR$?

A 50°

B 65°

C 90°

D 130°

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57) If $\triangle ABC$ and $\triangle XYZ$ are two triangles such that $\dfrac{AB}{XY} = \dfrac{BC}{YZ}$, which of the following would be sufficient to prove the triangles are similar?

A $\angle A \cong \angle X$

B $\angle B \cong \angle Y$

C $\angle C \cong \angle Z$

D $\angle X \cong \angle Y$

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58) What is the length of line segment $\overline{PQ}$ shown below?

A 9 units

B 10 units

C 13 units

D 14 units

---

59) "Two lines in a plane always intersect in exactly one point."

Which of the following best describes a *counterexample* to the assertion above?

A coplanar lines

B parallel lines
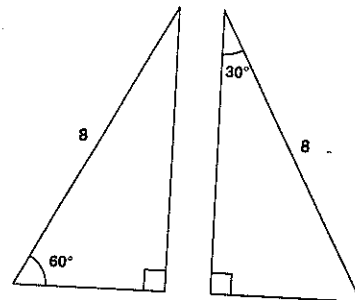
C perpendicular lines

D intersecting lines

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60) The vertices of $\triangle ABC$ are $A(2, 1)$, $B(3, 4)$, and $C(1, 3)$. If $\triangle ABC$ is translated 1 unit down and 3 units to the left to create $\triangle DEF$, what are the coordinates of the vertices of $\triangle DEF$?

A $D(0, 1), E(1, 2), F(1, 3)$

B $D(0, -1), E(0, 3), F(-2, -2)$

C $D(-2, 2), E(0, 3), F(-1, 0)$

D $D(-1, 0), E(0, 3), F(-2, 2)$

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61) Which of the following *best* describes the triangles shown below?

A both similar and congruent

B similar but not congruent

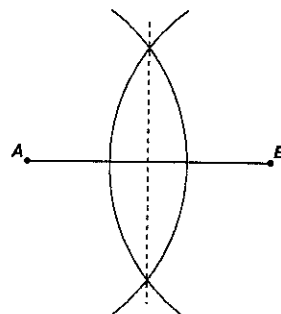C congruent but not similar

D neither similar nor congruent

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62) Which triangles must be similar?

A two obtuse triangles

B two scalene triangles with congruent bases

C two right triangles

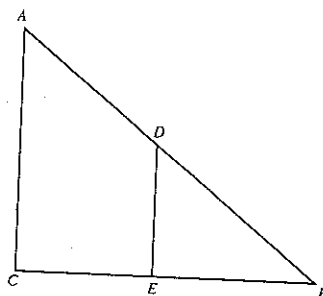D two isosceles triangles with congruent vertex angles

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63) What geometric construction is shown in the diagram below?

A an angle bisector

B a line parallel to a given line

C an angle congruent to a given angle

D a perpendicular bisector of a segment

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64) Which of the following facts would be sufficient to prove that triangles ABC and DBE are similar?

A $\overline{CE}$ and $\overline{BE}$ are congruent.

B $\angle ACE$ is a right angle.

C $\overline{AC}$ and $\overline{DE}$ are parallel.