

VIRGINIA STANDARDS OF LEARNING

Spring 2008 Released Test

END OF COURSE GEOMETRY

Form M0118, CORE 1

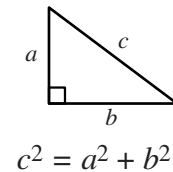
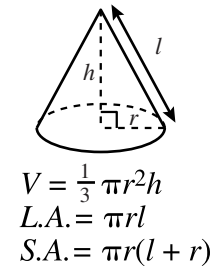
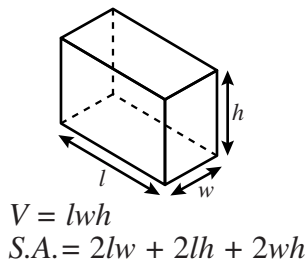
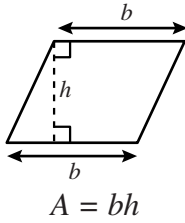
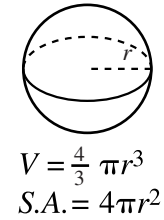
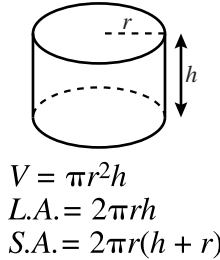
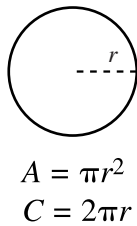
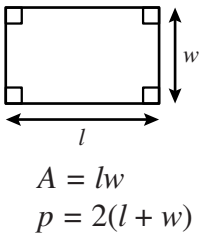
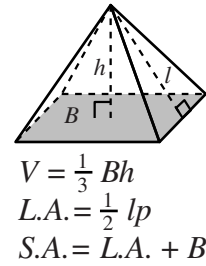
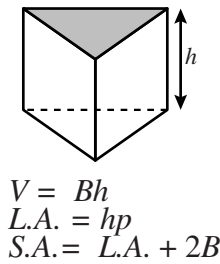
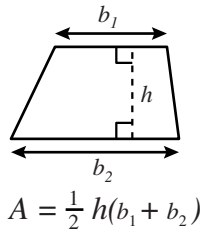
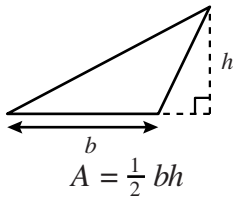
This released test contains 1 fewer test item (#1– 44 only)
than an original SOL EOC Geometry test.

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Geometry Formula Sheet

Geometric Formulas



Geometric Symbols

| Example | Meaning | Example | Meaning |
|----------------------------|----------------------------|---|--|
| $\angle A$ | angle A | \vec{AB} | vector AB |
| $m\angle A$ | measure of angle A | \perp | right angle |
| \overline{AB} | line segment AB | $\overleftrightarrow{AB} \parallel \overleftrightarrow{CD}$ | Line AB is parallel to line CD. |
| AB | measure of line segment AB | $\overleftrightarrow{AB} \perp \overleftrightarrow{CD}$ | Line AB is perpendicular to line CD. |
| \overleftrightarrow{AB} | line AB | $\angle A \cong \angle B$ | Angle A is congruent to angle B. |
| $\triangle ABC$ | triangle ABC | $\triangle A \sim \triangle B$ | Triangle A is similar to triangle B. |
| $\square ABCD$ | rectangle ABCD | | Similarly marked segments are congruent. |
| $\parallel\! \! \! / ABCD$ | parallelogram ABCD | | Similarly marked angles are congruent. |

Abbreviations

| | |
|--------------------|------|
| Volume | V |
| Lateral Area | L.A. |
| Total Surface Area | S.A. |
| Area of Base | B |

Pi

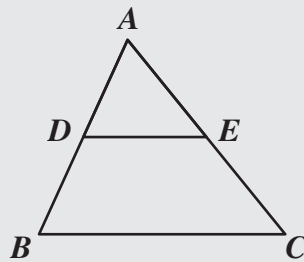
$$\pi \approx 3.14$$

$$\pi \approx \frac{22}{7}$$

Directions

Read each question and choose the best answer. Then fill in the circle on your answer document for the answer you have chosen.

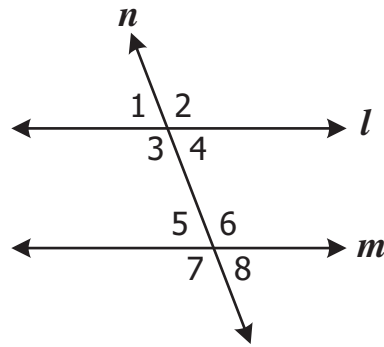
SAMPLE



If $\triangle ABC$ is similar to $\triangle ADE$, then $AB : AD = ? : AE$. Which replaces the “?” to make the statement true?

- A** AC
- B** AE
- C** DE
- D** BC

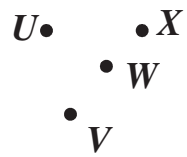
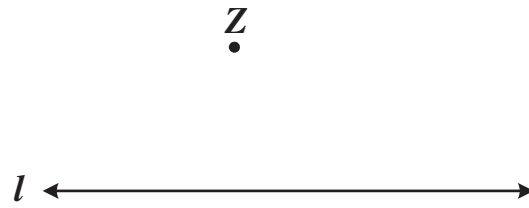
1 Lines l and m are cut by transversal n .



Which statement would prove $l \parallel m$?

- A $m\angle 2 = m\angle 6$
- B $m\angle 2 = m\angle 3$
- C $m\angle 7 + m\angle 8 = 180^\circ$
- D $m\angle 3 + m\angle 5 = 90^\circ$

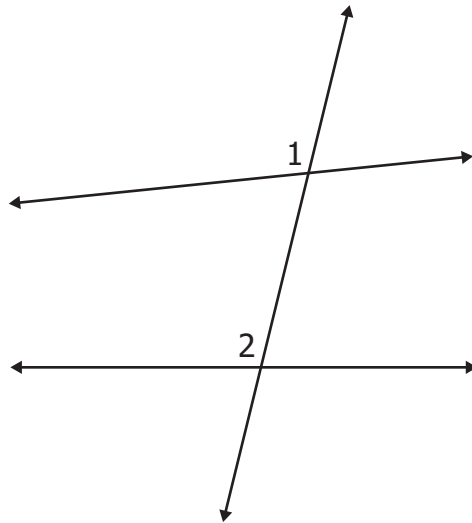
2



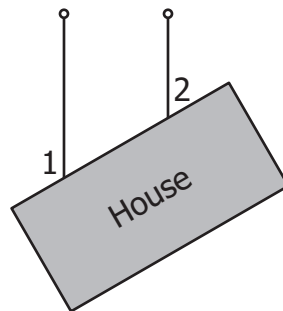
Which point is on the line \perp to l and passing through Z ?

- F U
- G V
- H W
- J X

- 3 In this figure, two lines are cut by a transversal. Which type of angles are $\angle 1$ and $\angle 2$?



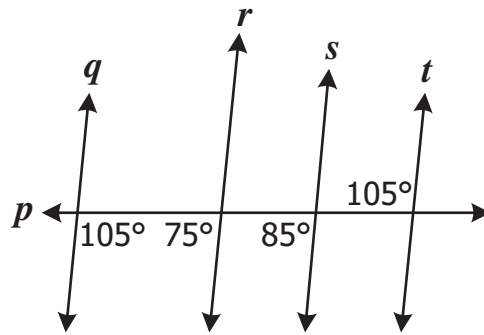
- A Vertical angles
B Corresponding angles
C Alternate interior angles
D Same-side interior angles
- 4 Sally is using strings to mark parallel rows for a vegetable garden behind her house.



If the measure of $\angle 1$ is 115° , what should be the measure of $\angle 2$?

- F 25°
G 65°
H 75°
J 115°

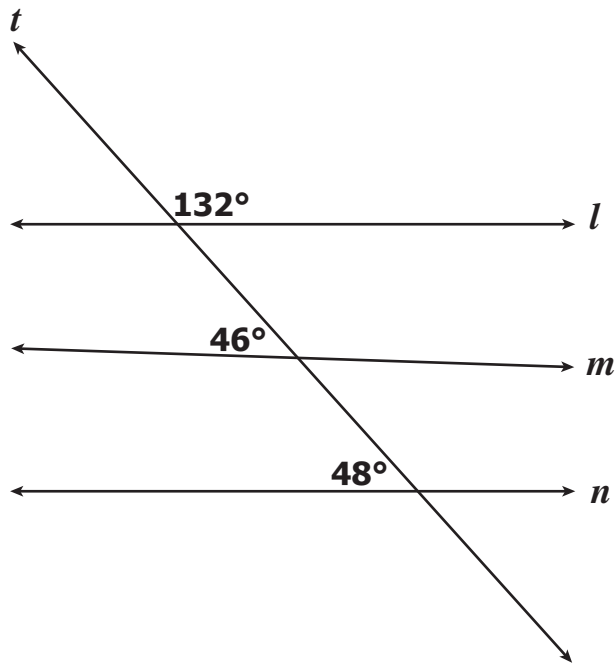
5 Line p is a transversal.



For lines q , r , s , and t , which is *not* parallel to the other three?

- A q
- B r
- C s
- D t

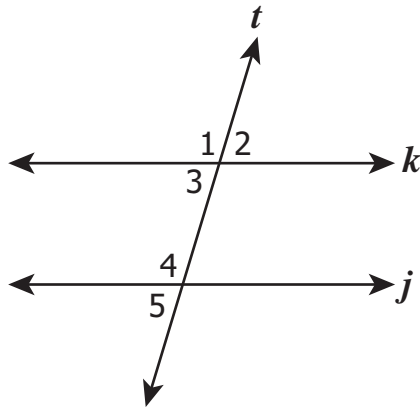
- 6 Lines l , m , and n are intersected by transversal t . The measures of some of the angles that are formed are shown.



Which of the following statements about lines l , m , and n *must* be true?

- F $l \parallel m \parallel n$
- G $l \parallel m$ only
- H $l \parallel n$ only
- J $m \parallel n$ only

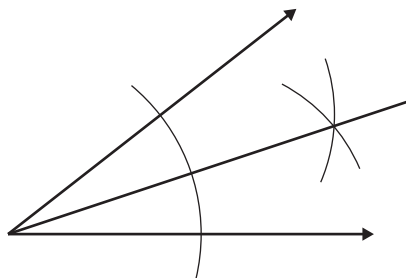
7 Transversal t intersects lines k and j as shown.



Which of the following relationships makes $j \parallel k$?

- A $\angle 2 \cong \angle 3$
- B $\angle 1 \cong \angle 3$
- C $\angle 4$ and $\angle 5$ are supplementary
- D $\angle 3$ and $\angle 4$ are supplementary

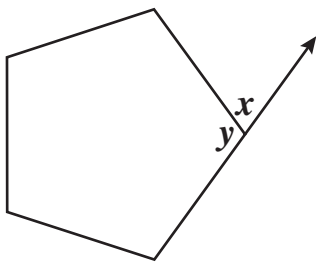
8



Which of the following constructions is illustrated?

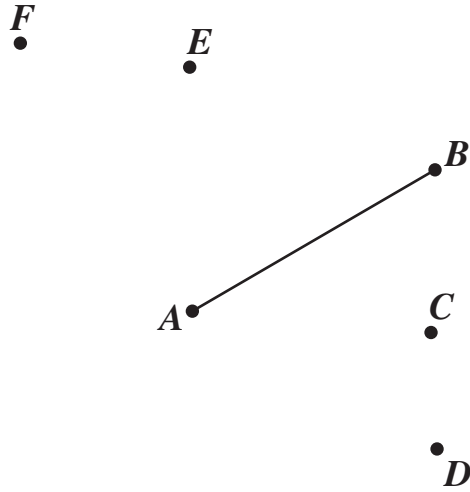
- F An angle congruent to a given angle
- G The bisector of a given angle
- H The bisector of a given segment
- J The perpendicular bisector of a given segment

9 This is a regular polygon.



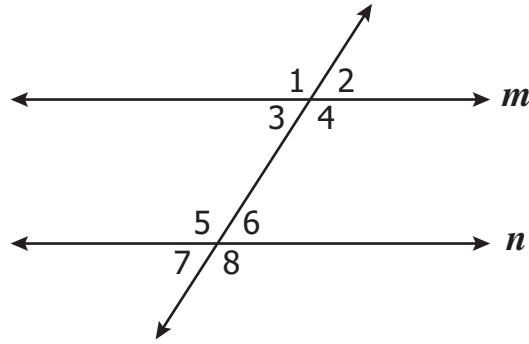
What are the values of x and y ?

- A $78^\circ, 102^\circ$
- B $72^\circ, 108^\circ$
- C $60^\circ, 120^\circ$
- D $45^\circ, 135^\circ$



Which line segment is apparently congruent to \overline{AB} ?

- F** \overline{AD}
- G** \overline{AC}
- H** \overline{AE}
- J** \overline{AF}



Which statement would *not* prove line m parallel to line n ?

- A $\angle 7 \cong \angle 6$
- B $\angle 1 \cong \angle 5$
- C $\angle 4 \cong \angle 5$
- D $\angle 3 \cong \angle 6$

12 What is the *converse* of the following statement?

If Joe goes fishing, then he needs bait.

- F If he needs bait, then Joe goes fishing.
- G If Joe does not go fishing, then he does not need bait.
- H If he does not need bait, then Joe does not go fishing.
- J If Joe goes fishing, then he does not need bait.

13 In which group of statements is the conclusion *not* justified by the previous pair of statements?

- A** All cooks work in the kitchen.
Mary is a cook.
Mary works in the kitchen.
- B** All dinosaurs are extinct.
A triceratops is a dinosaur.
All triceratops are extinct.
- C** All squares are rectangles.
All rectangles are parallelograms.
All squares are parallelograms.
- D** All fish live in the water.
Some snakes live in the water.
Some snakes are fish.

14 Let p represent

$$x^2 = 21,$$

and let q represent

x is not a whole number.

Which is a representation of the statement below?

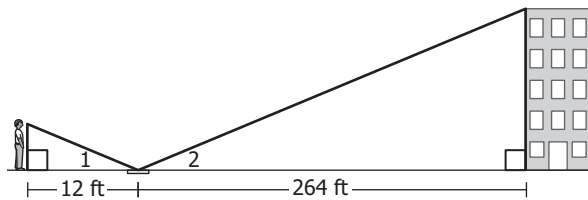
If x is a whole number, then $x^2 \neq 21$.

- F** $\sim p \rightarrow \sim q$
- G** $\sim p \rightarrow q$
- H** $p \rightarrow \sim q$
- J** $\sim q \rightarrow \sim p$

15 Which pipe lengths could be joined to form a triangle?

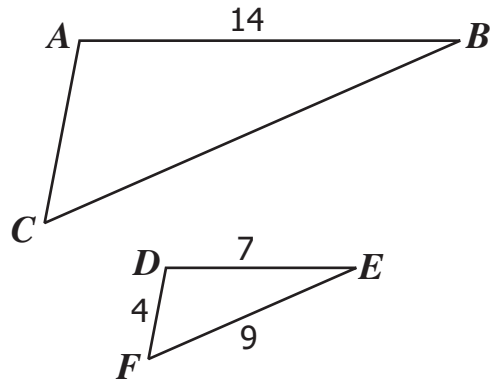
- A** 15 ft, 6 ft, 5 ft
- B** 13 ft, 12 ft, 5 ft
- C** 40 ft, 20 ft, 10 ft
- D** 19 ft, 16 ft, 2 ft

16 Joseph is standing 12 feet from a mirror lying on the ground, and his eyes are 5 feet above the ground.



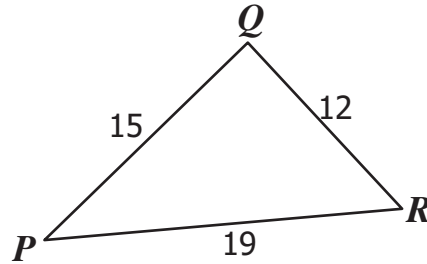
The line-of-sight reflection on the mirror makes $\angle 1$ congruent to $\angle 2$. If the building is 264 feet from the mirror, which is closest to the height of the building?

- F** 100 ft
- G** 110 ft
- H** 130 ft
- J** 145 ft



In addition to the information given in the drawing, which statement would be sufficient to prove that $\triangle ABC \sim \triangle DEF$?

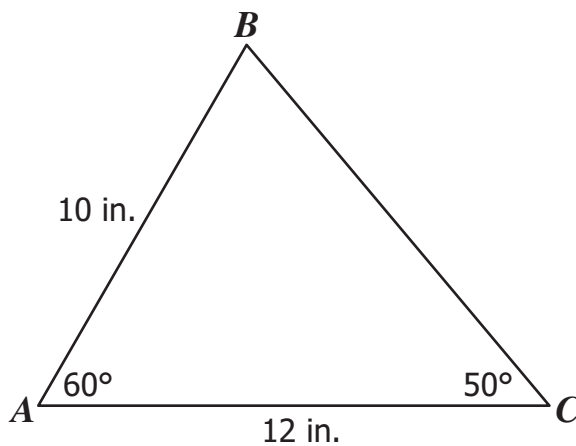
- A $\frac{BC}{AC} = \frac{1}{2}$
- B $\frac{BC}{AC} = \frac{9}{4}$
- C $AC = 18$ and $BC = 8$
- D $AC = 8$ and $BC = 18$



Which lists the angles of the triangle in order from least to greatest?

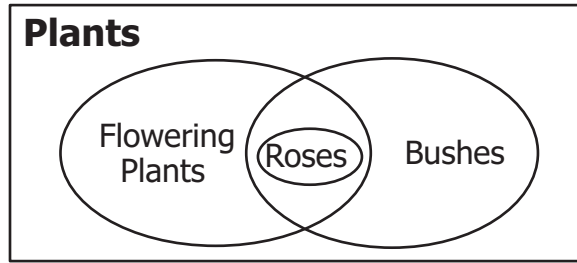
- F** $\angle R, \angle Q, \angle P$
- G** $\angle Q, \angle P, \angle R$
- H** $\angle P, \angle R, \angle Q$
- J** $\angle P, \angle Q, \angle R$

19 Jennifer made these measurements on $\triangle ABC$. BC must be —



- A** less than 10 inches
- B** between 10 and 12 inches
- C** between 12 and 22 inches
- D** greater than 22 inches

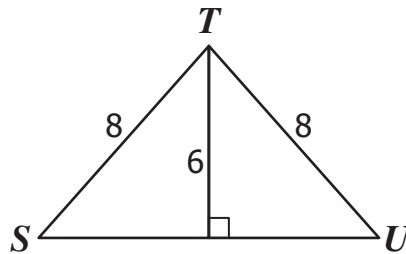
20



According to the diagram, which is true?

- F No bushes are flowering plants.
- G No roses are bushes.
- H Some roses are not flowering plants.
- J Some flowering plants are bushes.

21



What is the length of \overline{SU} ?

- A $2\sqrt{7}$ cm
- B 7 cm
- C $4\sqrt{7}$ cm
- D 20 cm