

CTB/McGraw-Hill

Grade 7 Benchmark 3 Math

Test ID: 76854

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Test Directions

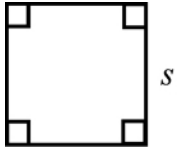
General Offline Instructions:

Today you will take the Acuity test. Read each question carefully and decide which answer is correct. Using your scan sheet, fill in the bubble that contains the letter for the answer you choose.

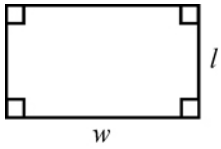
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Reference Sheet

You may use calculator π or the number 3.14

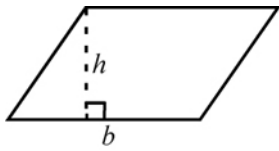


$$A = s \times s$$

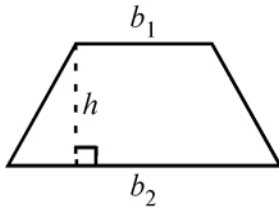


$$P = 2l + 2w$$

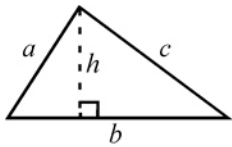
$$A = lw$$



$$A = bh$$

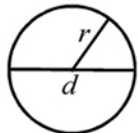


$$A = \frac{1}{2}h(b_1 + b_2)$$



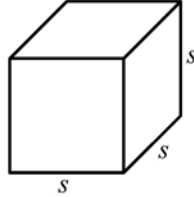
$$P = a + b + c$$

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



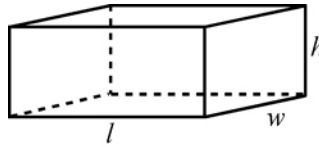
$$C = 2\pi r$$

$$A = \pi r^2$$



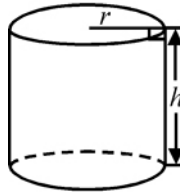
$$SA = 6s^2$$

$$V = s \times s \times s$$

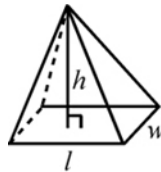


$$SA = 2lw + 2lh + 2wh$$

$$V = lwh$$



$$V = \pi r^2 h$$



$$V = \frac{1}{3}lwh$$

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Customary Conversions:

1 yard (yd) = 3 feet (ft)

1 foot = 12 inches (in.)

1 pound (lb) = 16 ounces (oz.)

1 gallon (gal) = 4 quarts (qt)

1 quart = 2 pints (pt)

1 pint = 2 cups (c)

1 cup = 8 fluid ounces

1 day = 24 hours (hr)

1 hour = 60 minutes (min)

1 minute = 60 seconds (sec)

Metric Conversions:

1 kilometer = 1000 meters

1 hectometer = 100 meters

1 dekameter = 10 meters

1 meter

1 decimeter = 0.1 meter

1 centimeter = 0.01 meter

1 millimeter = 0.001 meter

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1. Evaluate the expression.

$$6 \times 8 + 4 \div 4 - 3$$

- A 72
- B 15
- C 45
- D 46

2. Look at this equation.

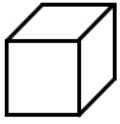
$$\frac{4}{6} = \frac{m}{15}$$

Which of these is equal to m ?

- A 8
- B $\frac{2}{45}$
- C 10
- D $\frac{3}{5}$

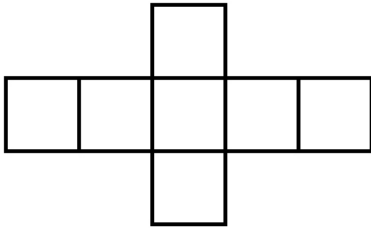
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3. Look at the figure.

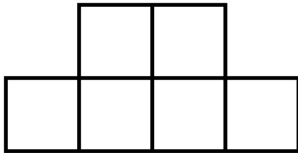


Which of these nets could be used to form the figure?

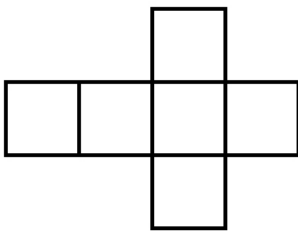
A



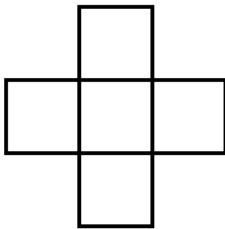
B



C



D



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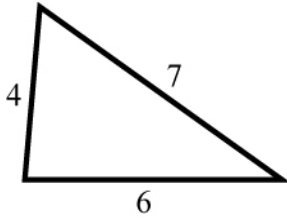
4. The line graph shows Mr. Haveril's salary over the last 4 years.



Based on the data in the line graph, what will Mr. Haveril's salary **most likely** be in 2006 if the pattern continues?

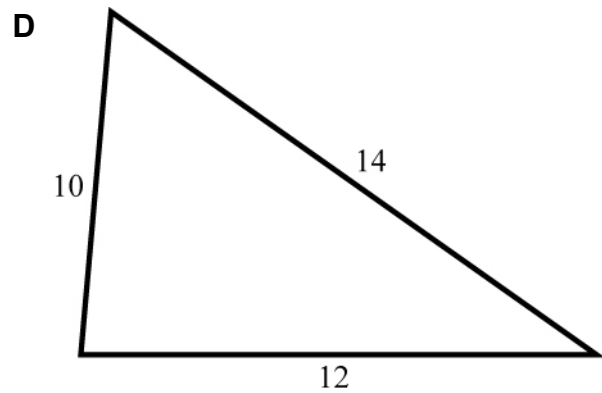
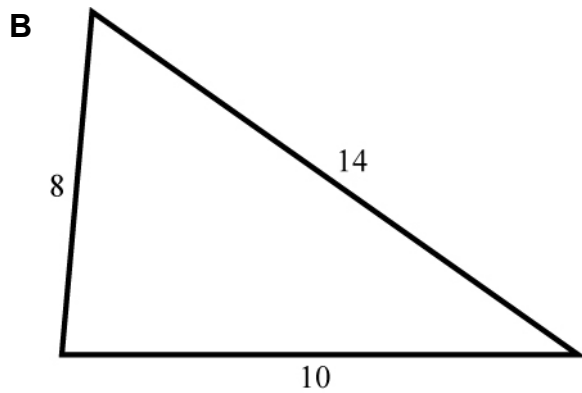
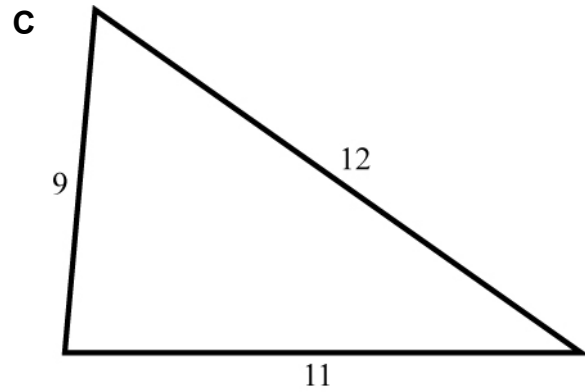
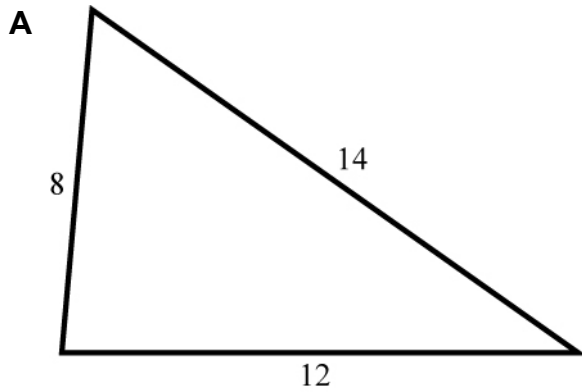
- A \$30,000
- B \$35,000
- C \$40,000
- D \$45,000

5. Look at this triangle.



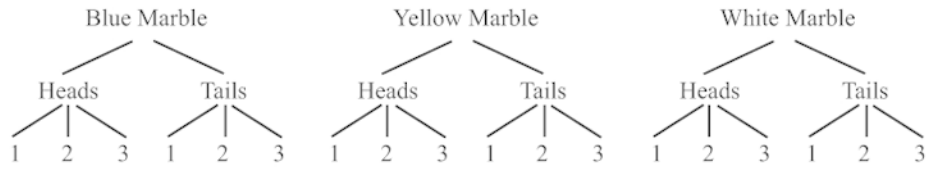
Note: art not drawn to scale

Which triangle is similar to this triangle?



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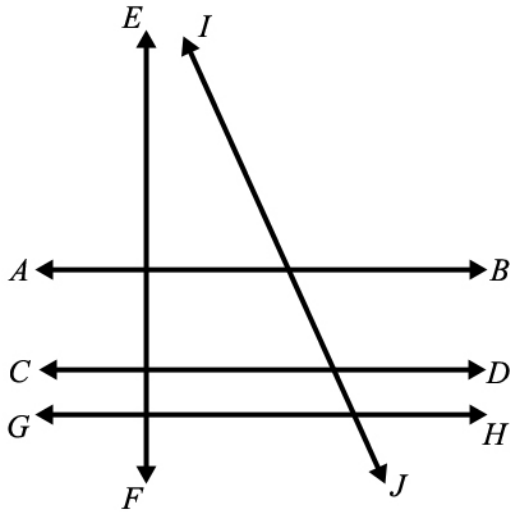
6. Students in a math class were asked to draw a marble from a bag, toss a coin, and spin a spinner with three equal sections labeled 1, 2, and 3. Look at this tree diagram.



What is the probability of selecting a yellow marble, the coin landing with tails, and spinning a 3?

- A $\frac{1}{2}$
- B 18
- C $\frac{1}{18}$
- D $\frac{1}{3}$

7. Look at this figure.

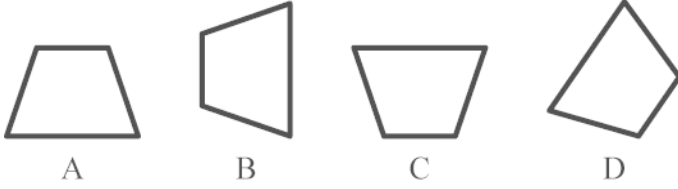


Which of these lines intersects, but is not perpendicular to, line AB ?

- A line IJ
 - B line EF
 - C line CD
 - D line GH
8. Which sample space contains all of the permutations of 3 letters from the word FACE?
- A FAC, FAE, FCE, ACE
 - B FAC, FCA, AFC, ACF, CFA, CAF, ECA
 - C FAC, FCA, AFC, FAE, FEA, AFE, FCE, FEC, CFE, CEF, ACE, AEC, CAE
 - D FAC, FCA, AFC, ACF, CFA, CAF, FAE, FEA, AFE, AEF, EFA, EAF, FCE, FEC, CFE, CEF, EFC, ECF, ACE, AEC, CAE, CEA, EAC, ECA

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9. Look at these congruent trapezoids.

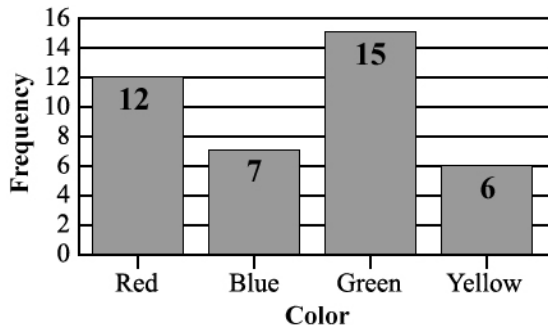


Which statement about the congruent trapezoids is true?

- A All corresponding sides and angles of the trapezoids are equal.
- B Only the corresponding parallel sides are equal.
- C Only the corresponding nonparallel sides are equal.
- D Only the corresponding angles, not the sides, are equal.

10. A bag contains red, blue, green, and yellow marbles. A marble is pulled from the bag, the color recorded, and then it is put back in the bag. This process is repeated 40 times. This graph summarizes the results.

MARBLE EXPERIMENT RESULTS



According to the results of the experiment, what is the probability of a green marble being pulled from the bag?

- A $\frac{3}{10}$
- B $\frac{3}{8}$
- C $\frac{5}{8}$
- D $\frac{3}{5}$

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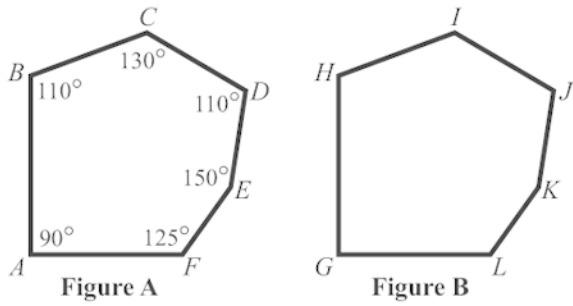
11. Mr. Tribuni is making a model of a Civil War battlefield. He is working on one section that has a width of 3 inches and a length of 4 inches.

If the length of this section of the actual battlefield is 76 feet, what is the width of that same part of the battlefield?

- A 101 feet
 - B 70 feet
 - C 57 feet
 - D 75 feet
12. Jerry drew a triangle with angles that measure 75° , 80° , and 25° . What type of triangle did Jerry draw?
- A acute
 - B equiangular
 - C obtuse
 - D right
13. Ali has a spinner with 20 equal sections. There are 6 blue sections, 2 white sections, 5 purple sections, and 7 orange sections. What is the probability of spinning and getting a section that is **not** purple?

- A $\frac{1}{4}$
- B $\frac{3}{1}$
- C $\frac{3}{4}$
- D $\frac{1}{3}$

14. Look at these congruent figures.



What is the measure of $\angle H$?

- A 130°
 - B 90°
 - C 110°
 - D 150°
15. Larry has 4 suits, 3 ties, and 7 shirts. How many different combinations of one suit, one tie, and one shirt can Larry make?
- A 84
 - B 21
 - C 14
 - D 12
16. Quadrilateral QRST has one set of parallel sides, \overline{QR} and \overline{ST} . The length of \overline{QT} is not equal to the length of \overline{RS} . What type of quadrilateral is QRST?
- A parallelogram
 - B rectangle
 - C square
 - D trapezoid

17. Michaela has a set of flashcards. She picked one card without looking, recorded the color, and placed the card back in the set. She then shuffled the cards and repeated the process.

This table shows the results of her experiment.

Flashcard Color

Color	Frequency
Red	14
Blue	10
Green	6
Yellow	20

Michaela picks one more card. Based on the data in the table, what is the probability she will pick a yellow card?

A $\frac{1}{5}$

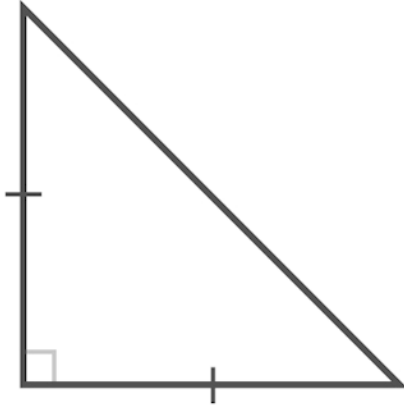
B $\frac{2}{5}$

C $\frac{1}{2}$

D $\frac{2}{3}$

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18. Look at this triangle.

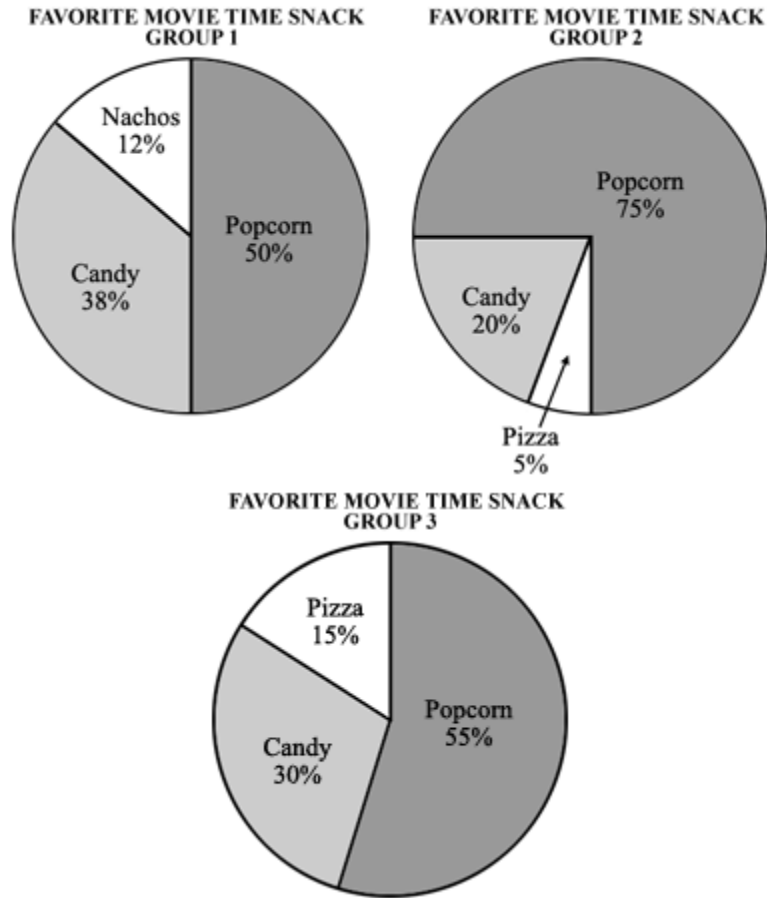


Which of these explains why the triangle must be an isosceles triangle?

- A It has exactly three sides.
- B One of the angles measures 90° .
- C Two of the sides are the same length.
- D The sum of the measures of the interior angles is 180° .

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19. The manager of a movie theater asked three groups of customers to choose their favorite movie time snack. The results of the survey are shown in these circle graphs.

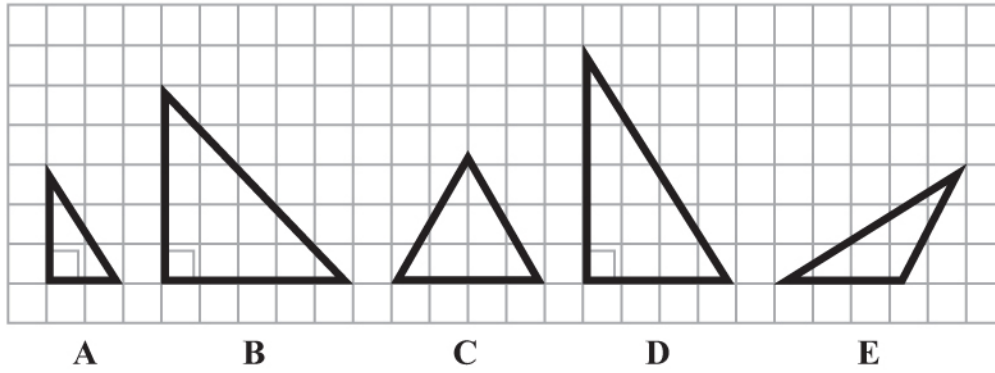


Which of these statements is true about the customers surveyed?

- A Nachos are the favorite movie time snack for all three groups surveyed.
- B At least half of all customers enjoy popcorn as their favorite movie time snack.
- C Over half of the customers from Group 2 preferred a movie time snack other than popcorn.
- D Of the customers surveyed in Group 1, 15% chose pizza as their favorite movie time snack.

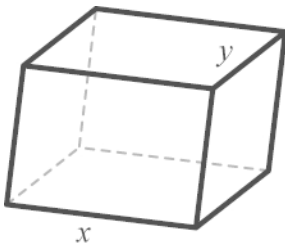
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20. Which 2 triangles are similar?



- A B and D
- B C and E
- C A and B
- D A and D

21. Look at this figure.



Which of these describes the relationship between lines x and y in the figure?

- A intersecting
- B parallel
- C perpendicular
- D skew

22. The probability of randomly selecting a red tile from a bag of tiles of various colors is $\frac{3}{8}$. What is the probability of **not** selecting a red tile?

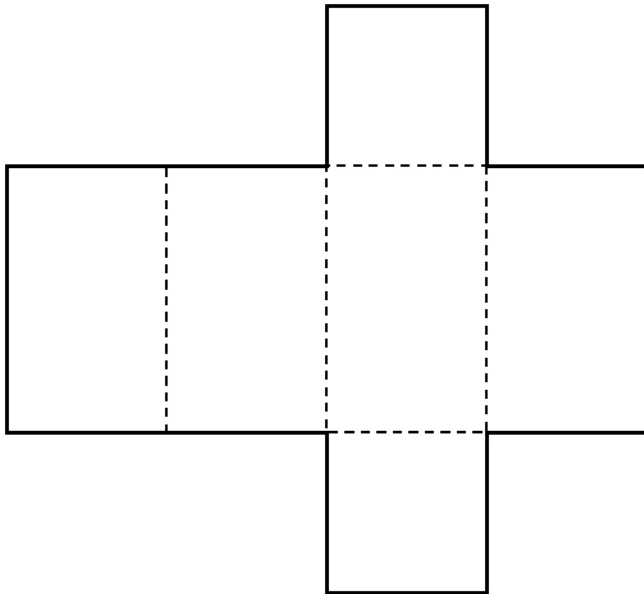
A $\frac{5}{8}$

B $\frac{13}{8}$

C $\frac{8}{3}$

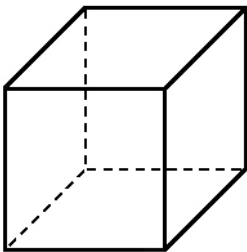
D $\frac{8}{13}$

23. Look at the net.

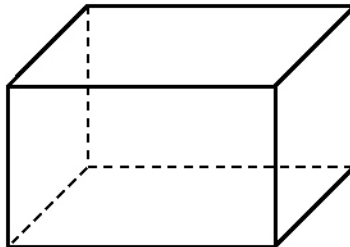


What three-dimensional shape does this net represent?

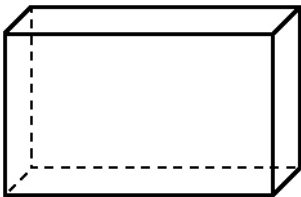
A



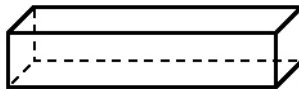
C



B



D



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24. Look at this list.

7 yellow marbles
5 blue marbles
3 green marbles
6 white marbles

What is the probability of randomly selecting a blue marble from a bag containing the marbles listed?

A $\frac{1}{21}$

B $\frac{5}{21}$

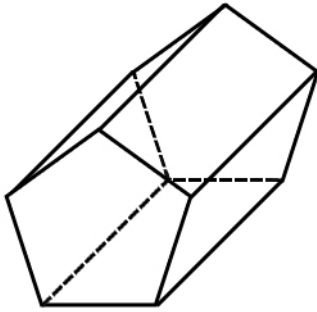
C $\frac{1}{5}$

D $\frac{5}{16}$

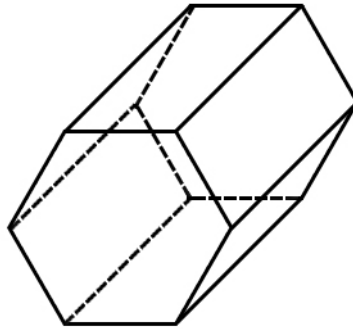
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25. Which three-dimensional shape has a set of 6 edges parallel to each other?

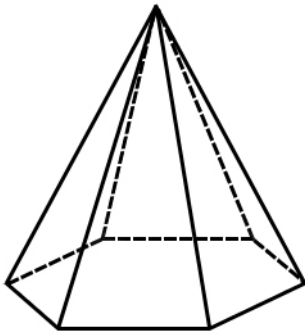
A



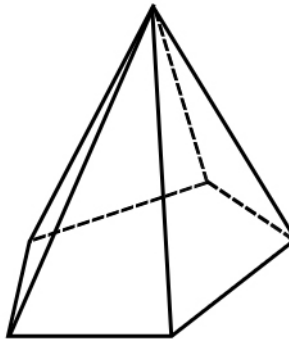
C



B



D



This is the end of the test.