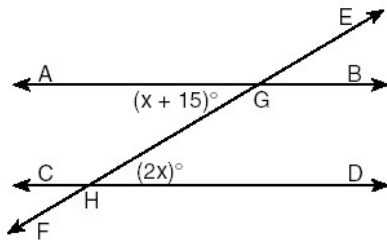


Name:

Date:

1

In the accompanying diagram, parallel lines \overleftrightarrow{AB} and \overleftrightarrow{CD} are intersected by transversal \overleftrightarrow{EF} at points G and H , respectively, $m\angle AGH = x + 15$, and $m\angle GHD = 2x$.



Which equation can be used to find the value of x ?

- (1) $2x = x + 15$ (3) $2x + x + 15 = 90$
 (2) $2x + x + 15 = 180$ (4) $2x(x + 15) = 0$

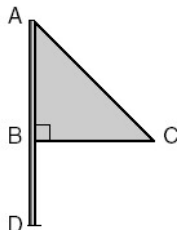
2

Which statement about quadrilaterals is true?

- (1) All quadrilaterals have four right angles.
 (2) All quadrilaterals have equal sides.
 (3) All quadrilaterals have four sides.
 (4) All quadrilaterals are parallelograms.

3

Triangle ABC represents a metal flag on pole AD , as shown in the accompanying diagram. On a windy day the triangle spins around the pole so fast that it looks like a three-dimensional shape.

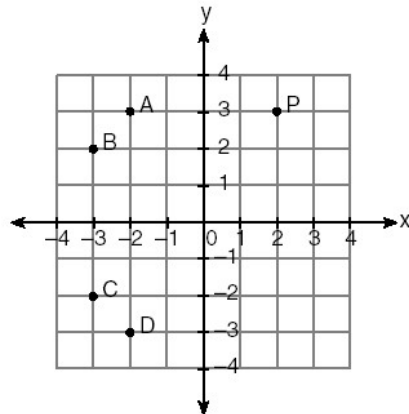


Which shape would the spinning flag create?

- (1) sphere (3) right circular cylinder
 (2) pyramid (4) cone

4

In the accompanying graph, if point P has coordinates (a,b) , which point has coordinates $(-b,a)$?



- (1) A
(2) B

- (3) C
(4) D

5

If $2ax - 5x = 2$, then x is equivalent to

(1) $\frac{2 + 5a}{2a}$

(3) $\frac{2}{2a - 5}$

(2) $\frac{1}{a - 5}$

(4) $7 - 2a$

6

Which expression represents the number of yards in x feet?

(1) $\frac{x}{12}$

(3) $3x$

(2) $\frac{x}{3}$

(4) $12x$

7

Delroy's sailboat has two sails that are similar triangles. The larger sail has sides of 10 feet, 24 feet, and 26 feet. If the shortest side of the smaller sail measures 6 feet, what is the perimeter of the *smaller* sail?

- (1) 15 ft
(2) 36 ft

- (3) 60 ft
(4) 100 ft

8

The ratio of two supplementary angles is 2:7. What is the measure of the *smaller* angle?

- (1) 10° (3) 20°
(2) 14° (4) 40°

9

Melissa is walking around the outside of a building that is in the shape of a regular polygon. She determines that the measure of one exterior angle of the building is 60° . How many sides does the building have?

- (1) 6 (3) 3
(2) 9 (4) 12



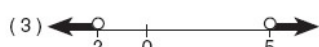
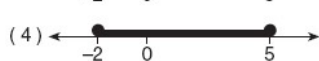
10

Tara buys two items that cost d dollars each. She gives the cashier \$20. Which expression represents the change she should receive?

- (1) $20 - 2d$ (3) $20 + 2d$
(2) $20 - d$ (4) $2d - 20$

11

Which graph represents the solution set for the expression $|2x + 3| > 7$?

- (1)  (2) 
(3)  (4) 

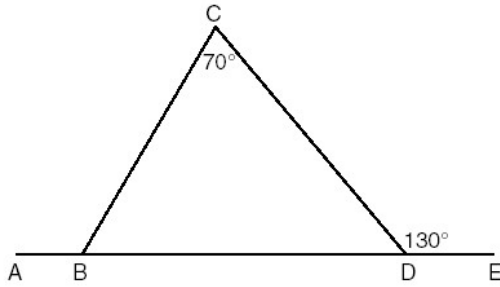
12

The graphs of the equations $y = 2x$ and $y = -2x + a$ intersect in Quadrant I for which values of a ?

- (1) $0 < a < 1$
(2) $a < 1$
(3) $a \geq 1$
(4) $a > 1$

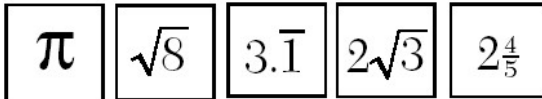
13

In the accompanying diagram of $\triangle BCD$, $m\angle C = 70$, $m\angle CDE = 130$, and side \overline{BD} is extended to A and to E. Find $m\angle CBA$.



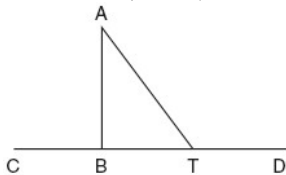
14

Kyoko's mathematics teacher gave her the accompanying cards and asked her to arrange the cards in order from least to greatest. In what order should Kyoko arrange the cards?



15

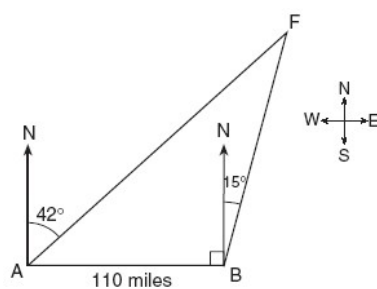
Given: $\triangle ABT$, \overline{CBTD} , and $\overline{AB} \perp \overline{CD}$.



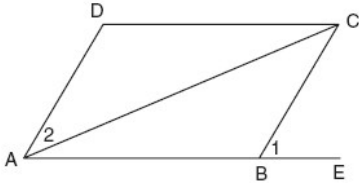
Write an indirect proof to show that \overline{AT} is not perpendicular to \overline{CD} .

16

As shown in the accompanying diagram, two tracking stations, A and B, are on an east-west line 110 miles apart. A forest fire is located at F, on a bearing 42° northeast of station A and 15° northeast of station B. How far, to the nearest mile, is the fire from station A?



Given: parallelogram $ABCD$, diagonal AC , and \overline{ABE}



Prove: $m\angle 1 > m\angle 2$