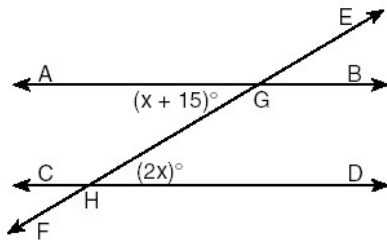**Name:**   **Date:**

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∠$AGH = x + 15$, and m∠$GHD = 2x$.

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.
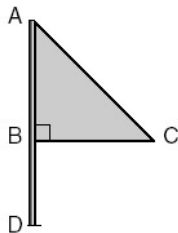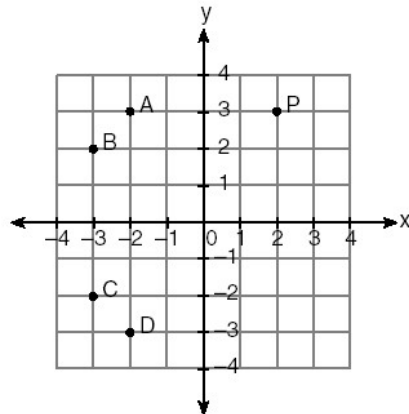

Which shape would the spinning flag create?

(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) $\dfrac{2 + 5a}{2a}$

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

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

(4) $7 - 2a$

6

Which expression represents the number of yards in x feet?

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

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

(3) $3x$

(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?

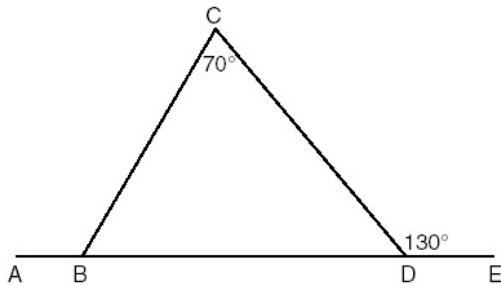(1) $20 - 2d$ (3) $20 + 2d$
(2) $20 - d$ (4) $2d - 20$

11

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

(1) 0 < a < 1
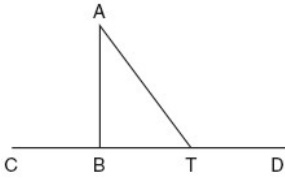**(2) a < 1**
(3) a ≥ 1
(4) a > 1

12

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 $m\angle CBA$.
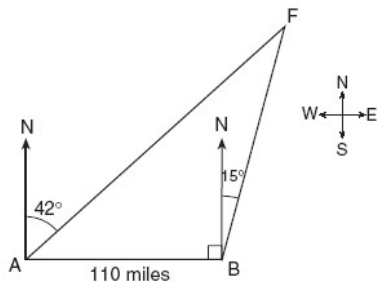
13

Given: ΔABT, $\overline{CBTD}$, and $\overline{AB}$, ^ $\overline{CD}$,

Write an indirect proof to show that $\overline{AT}$ is not perpendicular to $\overline{CD}$.
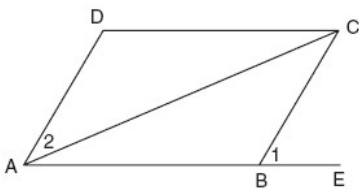
14

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?

15

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

Prove: m□1 > m□2