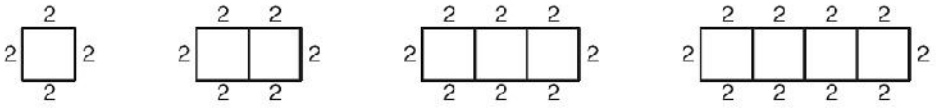
Name_____ Session 1 2 3 (Circle one) Date_____

DD2

1.

The squares below are arranged in a sequence to produce a geometric pattern.




Which expression can be used to determine the perimeter of a composite figure made of $s$ squares arranged in this pattern?

**A** $8s$

**B** $8s - 4$

**C** $4s + 4$

**D** $4s$

2.

Which is the solution to this pair of linear equations?

$$5y - 2x = 6$$

$$3x - 2y = 13$$

**A** $(3, -2)$

**B** $(5, -2)$

**C** $(7, 4)$

**D** $(8, -4)$

3.

Nikolai has a jar filled with 120 marbles. He has 72 red marbles, 17 blue marbles, 13 green marbles, and 18 purple marbles. What is the probability that he will randomly select a blue marble, without replacement, and then a purple marble from the jar?

**A** $\frac{7}{24}$

**B** $\frac{3}{140}$

**C** $\frac{17}{800}$

**D** $\frac{13}{840}$

4.

Circle $Q$ has a diameter $\overline{WY}$. Point $W$ is located at $(3, -2)$, and point $Y$ is located at $(5, -6)$. Which of the following ordered pairs represents point $Q$, the center of the circle?

**F** $(8, -8)$

**G** $(4, -4)$

**H** $(-1.5, 1.5)$

**J** $(3, -6)$

5.

What is the approximate distance between points $(-7, 2)$ and $(11, -5)$?

**A** 18.36 units

**B** 19.31 units

**C** 18.25 units

**D** 8.06 units

6.

The table below shows the number of line segments that can be drawn between a given number of points.

| Number of Points | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Points |  |  |  |  |
| Number of Line Segments | 0 | 1 | 3 | 6 |

Which expression can be used to determine the number of line segments that can be drawn between $n$ points?

**F** $\frac{3}{2}n$

**G** $n - 1$

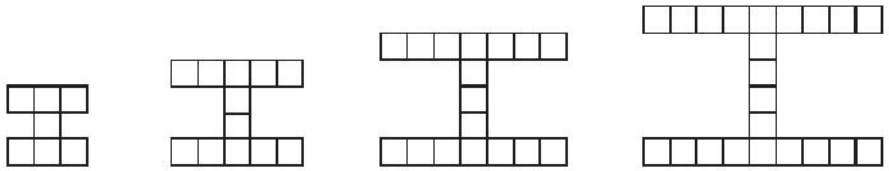
**H** $n^2 - 2n$

**J** $\frac{n(n-1)}{2}$

The square tiles below are arranged to show a pattern.

7.

The square tiles below are arranged to show a pattern.



Stage 1 Stage 2 Stage 3 Stage 4

Which expression can be used to determine the number of square tiles in Stage $n$?

**F** $4n + 3$

**G** $5n + 2$

**H** $n^2 + 6$

**J** $n^3 + 6$