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USES 3D GEOMETRY

2017B 6. What is the largest number of solid 2-in $\times$ 2-in $\times$ 1-in blocks that can fit in a 3-in $\times$ 2-in $\times$ 3-in box?

(A) 3 **(B)** 4 **(C)** 5 **(D)** 6 **(E)** 7

2004A 7. A grocer stacks oranges in a pyramid-like stack whose rectangular base is 5 oranges by 8 oranges. Each orange above the first level rests in a pocket formed by four oranges in the level below. The stack is completed by a single row of oranges. How many oranges are in the stack?

(A) 96 **(B)** 98 **(C)** 100 **(D)** 101 **(E)** 134

2015A 9. Two right circular cylinders have the same volume. The radius of the second cylinder is 10% more than the radius of the first. What is the relationship between the heights of the two cylinders?

(A) The second height is 10% less than the first.

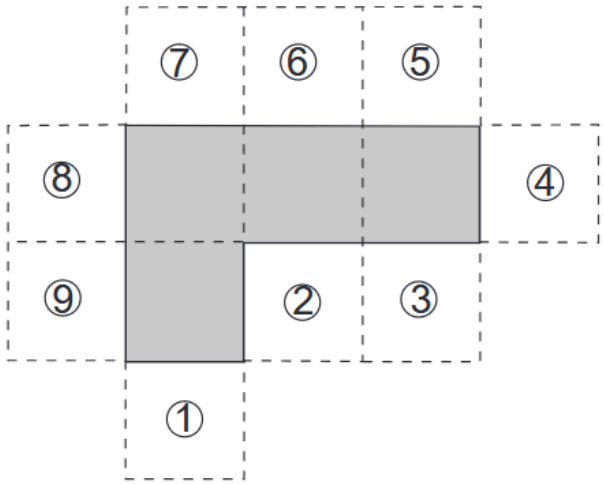
(B) The first height is 10% more than the second.

(C) The second height is 21% less than the first.

(D) The first height is 21% more than the second.

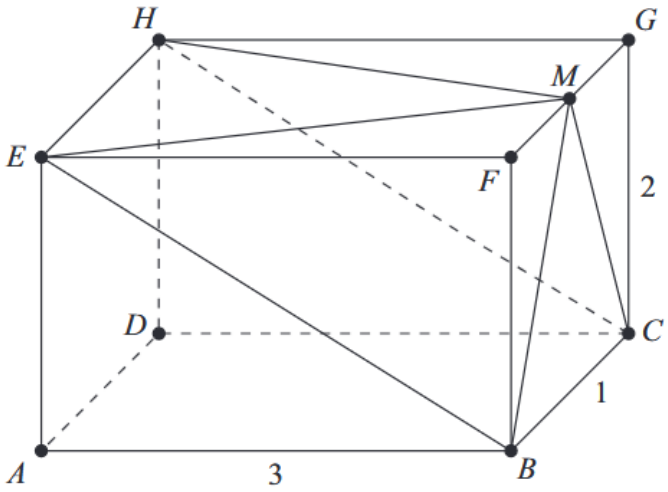
(E) The second height is 80% of the first.

2003A 10. The polygon enclosed by the solid lines in the figure consists of 4 congruent squares joined edge-to-edge. One more congruent square is attached to an edge at one of the nine positions indicated. How many of the nine resulting polygons can be folded to form a cube with one face missing?



(A) 2 **(B)** 3 **(C)** 4 **(D)** 5 **(E)** 6

2018B 10. In the rectangular parallelepiped shown, $AB = 3$, $BC = 1$, and $CG = 2$. Point M is the midpoint of $\overline{FG}$. What is the volume of the rectangular pyramid with base $BCHE$ and apex M?



(A) 1 **(B)** $\frac{4}{3}$ **(C)** $\frac{3}{2}$ **(D)** $\frac{5}{3}$ **(E)** 2