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41. The frequency chart below shows the cumulative number of Ms. Hernandez's science students whose test scores fell within certain score ranges. All test scores are whole numbers.

Score range	Cumulative number of students
65-70	12
71-75	13
76-80	19
81-85	21
86-90	21

How many students have a test score in the interval 71-80?

- A. 1
B. 6
C. 8
D. 12
E. 13

42. The number of decibels, d , produced by an audio source can be modeled by the equation $d = 10 \log\left(\frac{I}{K}\right)$, where I is the sound intensity of the audio source and K is a constant. How many decibels are produced by an audio source whose sound intensity is 1,000 times the value of K ?

- F. 4
G. 30
H. 40
J. 100
K. 10,000

$$d = 10 \log\left(\frac{I}{K}\right)$$

$$d = 10 \log\left(\frac{1000K}{K}\right)$$

$$d = 10 \log 1000$$

$$d = 30$$

43. Mario plays basketball on a town league team. The table below gives Mario's scoring statistics for last season. How many points did Mario score playing basketball last season?

Type of shot	Number attempted	Percent successful
1-point free throw	80	75%
2-point field goal	60	90%
3-point field goal	60	25%

- A. 129
B. 190
C. 213
D. 330
E. 380
- $80 \times .75 = 60$
 $60 \times .90 = 54$
 $60 \times .25 = 15$
- 60 pts
54.2 106 pts
15.3 45 pts
213 pts

44. The graph of $y = |x - 6|$ is in the standard (x, y) coordinate plane. Which of the following transformations, when applied to the graph of $y = |x|$, results in the graph of $y = |x - 6|$?

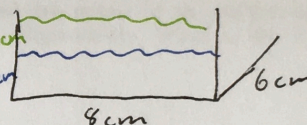
- F. Translation to the right 6 coordinate units
G. Translation to the left 6 coordinate units
H. Translation up 6 coordinate units
J. Translation down 6 coordinate units
K. Reflection across the line $x = 6$

Shift right by 6

If you don't remember → Number of units behind this graph with $y =$ button the grouping symbol shifts the graph up/down

45. Toby wants to find the volume of a solid toy soldier. He fills a rectangular container 8 cm long, 6 cm wide, and 10 cm high with water to a depth of 4 cm. Toby totally submerges the toy soldier in the water. The height of the water with the submerged toy soldier is 6.6 cm. Which of the following is closest to the volume, in cubic centimeters, of the toy soldier?

- A. 125
B. 156
C. 192
D. 208
E. 317



$$V_1 = (8 \text{ cm})(6 \text{ cm})(4 \text{ cm})$$

$$V_1 = 192 \text{ cm}^3$$

$$V_2 = lwh$$

$$V_2 = (8 \text{ cm})(6 \text{ cm})(6.6 \text{ cm})$$

$$V_2 = 316.8 \text{ cm}^3$$

$$V = V_2 - V_1$$

$$V = 316.8 \text{ cm}^3 - 192 \text{ cm}^3$$

$$V = 124.8 \text{ cm}^3$$

46. A box in the shape of a cube has an interior side length of 18 inches and is used to ship a right circular cylinder with a radius of 6 inches and a height of 12 inches. The interior of the box not occupied by the cylinder is filled with packing material. Which of the following numerical expressions gives the number of cubic inches of the box filled with packing material?

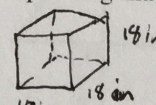
$$F. 6(18)^2 - 2\pi(6)(12) - 2\pi(6)^2$$

$$G. 6(18)^2 - 2\pi(6)(12)$$

$$H. 18^3 - \pi(6)(12)^2$$

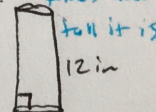
$$J. 18^3 - \pi(6)^2(12)$$

$$K. 18^3 - \pi(12)^3$$



$$V_1 = lwh$$

$$V_1 = 18^3$$



$$V_2 = \pi r^2 h$$

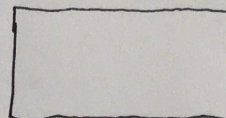
$$V_2 = \pi(6^2)(12)$$

$$V = V_1 - V_2$$

$$= 18^3 - \pi(6^2)(12)$$

47. A room has a rectangular floor that is 15 feet by 21 feet. What is the area of the floor in square yards?

- A. 24
B. 35
C. 36
D. 105
E. 144



Convert feet to yards by dividing by 3

29

$$\frac{15}{3} = 5 \quad \frac{21}{3} = 7$$

$$A = lw$$

$$A = (5 \text{ yd})(7 \text{ yd})$$

$$A = 35 \text{ yd}^2$$

GO ON TO THE NEXT PAGE.