Drill 1

Answers can be found in Part IV.

4

If $a = \dfrac{b}{c^2}$ and $c \neq 0$, what is the value of $\dfrac{1}{b^2}$?

A) ac^2

B) a^2c^4

C) $\dfrac{1}{ac^2}$

D) $\dfrac{1}{a^2c^4}$

7

If $p \neq 0$, what is the value of $\dfrac{\frac{1}{8}}{2p}$?

A) $\dfrac{1}{16p}$

B) $\dfrac{p}{4}$

C) $\dfrac{4}{p}$

D) $4p$

9

A certain standardized test has 50 questions. A student receives 1 point for each correct answer and loses $\dfrac{1}{4}$ of a point for each incorrect answer. Which of the following equations best models the net score, S, in points, for a student who completes all 50 questions and answers c of the questions correctly?

A) $S = 50 - 0.25c$

B) $S = 50 - 0.75c$

C) $S = c - 0.25(50 - c)$

D) $S = c - 0.75(50 - c)$

12

$$2\left|4y - 5\right| < 24$$

What is the sum of all the integer solutions to the inequality above?

A)   7

B)   9

C)   10

D)   14

5

David acquired a data plan for his smart phone. Every month he pays a flat rate of $25 and an additional $0.05 for every megabyte he goes over his monthly limit. Which of the following represents David's monthly data bill when he goes over his limit by m megabytes?

A) $25 + 1.05m$

B) $25 + 0.05m$

C) $0.05(25 + m)$

D) $1.05(25 + m)$

11

Luciano measured the amount of water that evaporated over a period of time from a container holding w ounces of water, where w is greater than 12. By the end of the first day, the cup had lost 2 ounces of water. By the end of the 7th day, the cup had lost an additional 8 ounces of water. By the end of the 11th day, the cup had lost half of the water that remained after the 7th day. Which of the following represents the remaining amount of water, in ounces, in Luciano's container at the end of the 11th day?

A) $\dfrac{w - 2}{8}$

B) $\dfrac{w - 2}{2} - 10$

C) $\dfrac{1}{2}w - 10$

D) $\dfrac{w - 10}{2}$

18

Jodi has x dollars in her bank account. She withdraws $\frac{1}{6}$ of the money in her account to pay her rent and another $\frac{1}{6}$ of the money in her account to make her car payment. Jodi then deposits her paycheck of y dollars into her account. A week later, she withdraws $\frac{1}{2}$ of the money in her account to spend on a new set of knives. In terms of x, how many dollars are left in Jodi's account?

A) $\dfrac{(4x-3y)}{6}$

B) $\dfrac{(3x-5y)}{6}$

C) $\dfrac{(3x-y)}{6}$

D) $\dfrac{(2x+3y)}{6}$

29

15% of the members of the incoming freshmen class at a certain university are left-handed, and the remaining members are right-handed. 65% of the same incoming freshmen class are female, and the rest are male. If $\frac{2}{3}$ of the left-handed students are male, then what percent of the female class is right-handed, to the nearest tenth of a percent? (Disregard the percent sign when gridding your answers. For example, if the answer is 43.2%, grid in 43.2.)