

# Drill 5

Answers can be found in Part IV.

14

If  $5x^2 = 125$ , what could be the value of  $5x^3$ ?

.	/	/	.
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

15

$$z = 5 - 5[5z - 2(1 - z)]$$

In the equation above, what is the value of  $z$ ?

.	/	/	.
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

16

If  $3a + 2b = 37$  and  $7a + 4b = 85$ , what is the value of  $b^2 + 6b - 10$ ?

.	/	/	.
.	.	.	.
	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

17

Kimberly is an apiologist studying the sugar content of different sugar-water solutions to determine which is preferred by her hive of honeybees. After trying Solution 1, which has a sugar content of 25%, and Solution 2, which has a sugar content of 10%, she decides to make a new solution. She mixes 50 ounces of Solution 1 with some quantity of Solution 2 to make Solution 3, which has a sugar content of 15%. How many ounces of Solution 2 did Kimberly use to make Solution 3?

.	/	/	.
.	.	.	.
	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9



28

Estimated Numbers of Cell Phone Users by Type  
(in millions)

	Prepaid users	Contracted users	Total
2008	45	225	270
2012	75	250	325
Total	120	475	595

If a cell phone user is selected at random in 2008, what is the probability that user is a contracted user?

.	/	/	.
.	.	.	.
	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9



29

If  $5 - \sqrt{z} = \sqrt{z - 5}$ , what is the value of  $z$ ?

.	/	/	.
.	.	.	.
	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9



30

Linh travels from his home in Canada, where temperature is measured in degrees Celsius, to Houston, where temperature is measured in degrees Fahrenheit. The weather channel forecasts the high temperature in Houston for the next 2 days as 95 degrees and 86 degrees Fahrenheit, respectively. He wants to convert these temperatures from Fahrenheit to Celsius. To do so, he subtracts 32 from the degrees in Fahrenheit for each day and multiplies the difference by  $\frac{5}{9}$ . How many degrees higher is the predicted temperature for the first day than the predicted temperature for the second day, in degrees Celsius?

.	/	/	.
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9



31

Mathew and Moriah purchased a tandem bicycle for \$540. If the amount Moriah paid was \$30 less than twice the amount Mathew paid, how much, in dollars, did Moriah pay? (Disregard the dollar sign when gridding in your answer.)

.	/	/	.
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9