No Variables? No Problem!

If an algebra question asks you to find a fraction or a percent, plug in your own number.

12. If m and n are positive integers such that $\frac{2}{3}$ of m is equal to $\frac{1}{2}$ of n, then m is what fractional part of n?

(A) $\frac{1}{3}$

(B) $\frac{3}{5}$

(C) $\frac{3}{4}$

(D) $\frac{4}{3}$

(E) $\frac{5}{3}$

14. On Wednesday, Morris ate half of a pizza pie. On Thursday, he ate one-quarter of what was left of the pizza. What fraction of the entire pie did Morris eat on Wednesday and Thursday?

(A) $\frac{1}{4}$

(B) $\frac{3}{8}$

(C) $\frac{1}{2}$

(D) $\frac{5}{8}$

(E) $\frac{3}{4}$

22. In the last 3 months, the volume output of a shoe factory decreased 10 percent. If the output continued to decrease at the same rate for the next 3 months, by what percent would the output have decreased over the entire 6-month period?

(A) 5%
(B) 10%
(C) 19%
(D) 20%
(E) 21%

Plugging In The Answer Choices

If an algebra question asks you for a specific amount, plug in the answer choices. Remember to start with answer choice C.

3. Vicken, Roger, and Adam want to buy a $90 radio. If Roger agrees to pay twice as much as Adam, and Vicken agrees to pay three times as much as Roger, how much must Roger pay?

(A) $10
(B) $20
(C) $30
(D) $45
(E) $65

3. Two less than a certain number is one-third of that number. What is the number?

(A) 1
(B) 3
(C) 6
(D) 8
(E) 9

6. Elvis gave his chauffeur a gold lamé suit and gave his cook a diamond ring. If the suit is worth one-fifth of what the ring is worth, and if the two items together are worth $4800, then how much is the ring worth?

(A) $800
(B) $960
(C) $3840
(D) $4000
(E) $4250

7. A set of three positive integers has a sum of 9 and a product of 24. If the smallest of the integers is 2, what is the largest?

(A) 4
(B) 6
(C) 8
(D) 9
(E) 12

8. If $\frac{1}{d} + \frac{1}{d} = 8$, then $d =$

(A) $\frac{1}{8}$

(B) $\frac{1}{4}$

(C) 1

(D) 4

(E) 8

9. Marlene has twice as many gumballs as Carla. If Marlene were to give Carla three gumballs, Marlene would then have one gumball less than Carla. How many gumballs does Marlene currently have?

(A) 4
(B) 5
(C) 7
(D) 8
(E) 10

10. Lori is 15 years older than Carol. In 10 years, Lori will be twice as old as Carol. How old is Lori now?

(A) 5
(B) 12
(C) 20
(D) 25
(E) 30

11. Mel owes money to Elizabeth, Rob, and Ken. Mel owes Elizabeth half the amount he owes Rob and owes Ken three times the amount he owes Elizabeth. If Mel owes the three a total of $18, then how much does he owe Elizabeth?

(A) $3
(B) $5
(C) $10
(D) $12
(E) $13

11. If the average (arithmetic mean) of $x + 7$ and $x - 11$ is 9, then $x =$

(A) −11
(B) −5
(C) 0
(D) 5
(E) 11

11. Judy is 26 years old and Diane is 5 years old. In how many years will Judy be twice as old as Diane?

(A) 16
(B) 19
(C) 21
(D) 24
(E) 26

21. Farmer Jones had equal amounts of wheat, oats, and corn. He made horse feed by mixing $\frac{1}{3}$ of the wheat, $\frac{1}{2}$ of the oats, and $\frac{1}{4}$ of the corn. If he made 52 pounds of horse feed, how many pounds of oats did he have originally?

(A) 45
(B) 48
(C) 50
(D) 52
(E) 66

13. In a group of 80 children, there are 22 more girls than boys. How many girls are in the group?

(A) 36
(B) 44
(C) 48
(D) 51
(E) 58

15. Mike has twice as many stamps as Jean. After he gives Jean 6 stamps, he still has 8 more stamps than Jean. How many stamps did Mike have before he gave Jean the 6 stamps?

(A) 28
(B) 32
(C) 36
(D) 40
(E) 42

17. If $(x - 6)(x + 6) = 13$, then a possible value for x is

(A) $\sqrt{7}$
(B) $\sqrt{13}$
(C) 7
(D) 19
(E) 49

18. A group of people split equally the $30 cost of renting a car. If an additional person joined the group, each person would owe $1 less. How many people were in the group originally?

(A) 5
(B) 6
(C) 10
(D) 12
(E) 15

$x, 2x, 3x - 5, x + 2$

24. The four terms above represent four consecutive integers, although they are not necessarily shown in consecutive order. Which of the following provides *all* possible values of x?

(A) There are no possible values of x.
(B) 9 only
(C) 1 only
(D) 3 only
(E) 0 and 3 only

Plugging in More than Once

5. If x and y are odd integers, then which of the following must be an odd integer?

(A) $2xy$

(B) $\frac{x}{y}$

(C) $x + y + 1$

(D) $x - y$

(E) $3x + 5y$

5. If k is a fraction between 0 and 1, which of the following must also be a fraction between 0 and 1?

(A) $\frac{1}{k}$

(B) $k - 1$

(C) $\frac{1}{1-k}$

(D) $\frac{k}{k+1}$

(E) $\frac{k+2}{k}$

11. If a, b, and c are odd integers, which of the following must also be odd?

(A) $(a + b)c$
(B) $ac + b$
(C) $(a + b) - (b + c)$
(D) abc
(E) $(b - a) + (c - b)$

12. If d, e, and f are positive integers and $d < e < f$, which of the following must be true?

(A) $d + e > f$

(B) $def > 0$

(C) $d + 2 = e + 1 = f$

(D) $\frac{f}{d} = e$

(E) $f - e > d$

21. If p and q are integers, such that $p < 0 < q$, which of the following must be true?

I. $2p < 2q$
II. $p^2 < q^2$
III. $p + q = 0$

(A) I only
(B) II only
(C) I and II
(D) I and III
(E) I, II and III

23. If $\frac{8+y}{4}$ is an integer, which of the following must be true?

I. y is a multiple of 4
II. $\frac{y}{8}$ is an integer
III. $\frac{12+y}{4}$ is an integer

(A) I only
(B) II only
(C) I and II only
(D) II and III only
(E) I and III only

STOP! YOUR HOMEWORK IS DONE! GO PLAY!