WITH Calculator

SYSTEM OF EQUATIONS

Multiple Choice

E **1** 8

One pound of grapes costs $2. At this rate, how many dollars will c pounds of grapes cost?

A) $2c$ C) $\frac{2}{c}$

B) $2+c$ D) $\frac{c}{2}$

A. NOTICE RATIO 16. : #
1 : 2
2 : 4
3 : 6
$C = 2c$

E **4** 5

If $3(c+d) = 5$, what is the value of $c+d$?

A) $\frac{3}{5}$ C) 3

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

A. SOLVE FOR C+D $3(c+d) = 5$ $c+d = \frac{5}{3}$

B. SAME AS SOLVING FOR X $3x = 5$ $x = \frac{5}{3}$

E **4** TWO-STEP TRANSLATE 1

If $16 + 4x$ is 10 more than 14, what is the value of $8x$?

A) 2
B) 6
C) 16
D) 80

A. TRANSLATE $16 + 4x = 14 + 10$
$16 + 4x = 24$
$4x = 8$
B. SOLVE FOR X $x = 2$
C. THEN 8X $8x = 8(2) = 16$

D. OR NOTICE RATIO $4x = 8$ $8x = 16$

E **8** ABSOLUTE VALUE RULE 1

For what value of n is $|n-1|+1$ equal to 0 ?

A) 0
B) 1
C) 2
D) There is no such value of n.

A. TRANSLATE TO MATH $|N-1|+1 = 0$
$|N-1| \neq -1$
THE ABSOLUTE VALUE CAN NEVER BE NEGATIVE

E **9** 7

$9ax + 9b - 6 = 21$

Based on the equation above, what is the value of $ax+b$?

A) 3
B) 6
C) 8
D) 12

A. REWRITE & ADD 6 TO BOTH SIDES $9ax + 9b - 6 = 21$
B. SOLVE FOR $ax+b$ $9ax + 9b = 27$ $ax + b = \frac{27}{9} = 3$
C. DIVIDE BOTH SIDES BY 9

M **11** 6

$7x + 3y = 8$
$6x - 3y = 5$

For the solution (x, y) to the system of equations above, what is the value of $x - y$?

A) $-\frac{4}{3}$ C) $\frac{4}{3}$

B) $\frac{2}{3}$ D) $\frac{22}{3}$

A. SOLVE FOR X $7x + 3y = 8$ + $6x - 3y = 5$ $13x = 13$ $x = 1$
B. SOLVE FOR Y $7(1) + 3y = 8$ $3y = 1$ $y = \frac{1}{3}$
C. SUBTRACT $x - y = 1 - \frac{1}{3} = \frac{3}{3} - \frac{1}{3} = \frac{2}{3}$

M **12** 5

$\frac{1}{2}y = 4$
$x - \frac{1}{2}y = 2$

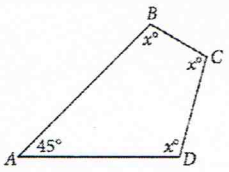
A. PLUG IN B. SOLVE $x - 4 = 2$ $x = 6$

The system of equations above has solution (x, y). What is the value of x ?

A) 3 C) 4

B) $\frac{7}{2}$ D) 6

M **14** ALGEBRA USIN GEO 7



A. 4 SIDES = 360° $360 - 45 = 315$
B. SUBTRACT 45
C. DIVIDE BY 3 Xs $315 \div 3 = 105$

In the figure above, what is the value of x ?

A) 45
B) 90
C) 100
D) 105

M **16** *SLICK 7

If $a - b = 12$ and $\frac{b}{2} = 10$, what is the value of $a+b$?

A) 2
B) 12
C) 32
D) 52

A. SOLVE FOR B $\frac{b}{2} = 10$ $b = 20$
B. SOLVE FOR C $a - b = 12$ $a - 20 = 12$ $a = 32$
C. ADD $a + b = 32 + 20 = 52$

M **18** 1

$y < -x + a$ $0 < -0 + a$ $0 < a$
$y > x + b$ $0 > 0 + b$ $0 > b$

In the xy-plane, if $(0, 0)$ is a solution to the system of inequalities above, which of the following relationships between a and b must be true?

A) $a > b$
B) $b > a$
C) $|a| > |b|$
D) $a = -b$

A. PLUG IN ZEROS
B. SOLVE IF $a > 0 > b$ THEN $a > b$

H **28** *SLICK ABSOLUTE VALUE 6

Two different points on a number line are both 3 units from the point with coordinate -4. The solution to which of the following equations gives the coordinates of both points?

A) $|x+4| = 3$
B) $|x-4| = 3$
C) $|x+3| = 4$
D) $|x-3| = 4$

A. LABEL
B. P.O.E.
C. PLUG IN $x = -1$ $x = -7$
$|-1+4| = |3| = 3$ Yup!
$|-7+4| = |-3| = 3$ Yup!

WITH Calculator

SYSTEM OF EQUATIONS

Student Response

E **32** SOLVE FOR A 8

$$x - \frac{1}{2}a = 0$$

If $x = 1$ in the equation above, what is the value of a?

$x - \frac{1}{2}a = 0$ A. CHANGE TO DECIMAL

$x - .5a = 0$

$x = .5a$ B. PLUG IN 1

$1 = .5a$

$\frac{2}{} = \frac{1}{.5} = a$ C. SOLVE

E **32** SOLVE FOR X 6

$$2(5x - 20) - (15 + 8x) = 7$$

What value of x satisfies the equation above?

A. DISTRIBUTE $10x - 40 - 15 - 8x = 7$

B. REDUCE $2x = 62$

C. SOLVE FOR X $x = \frac{62}{2} = 31$

OR

A. STACK $10x - 40$

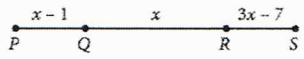
$- \quad 8x + 15$

B. SUBTRACT $2x - 55 = 7$

C. SOLVE FOR X $2x = 62$

$x = 31$

M **33** SOLVE FOR X THEN PS 5



Note: Figure not drawn to scale.

On $\overline{PS}$ above, $PQ = RS$. What is the length of $\overline{PS}$?

A. FIND VALUE OF X $x - 1 = 3x - 7$

$6 = 2x$

$3 = x$

B. PLUG IN $x = 3$

SO $PS = PQ + QR + RS$

$= (x - 1) + x + (3x - 7)$

$= (3 - 1) + 3 + (3(3) - 7)$

$= 2 + 3 + 2$

$= 7$