Name: __Key__

1. Solve the following equation $-2(2a + 7) + 2 = -6a$.

$$-4a - 14 + 2 = -6a$$
$$-4a - 12 = -6a$$
$$+4a \qquad +4a$$
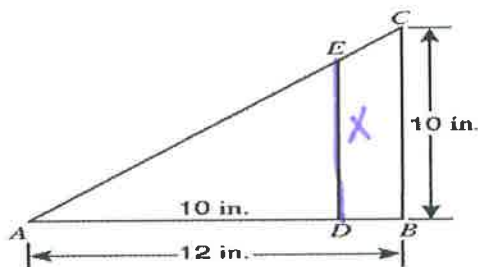$$\frac{-12}{-2} = \frac{-2a}{-2}$$

$$\boxed{6 = a}$$

2. The RHS Art Magnet was ordering art supplies that they would need this year in class. Each student ordered a 6 inch paint brushes that cost $2.75 and a paint tray that cost $1.50. If x represent the number of students in the art magnet, which equation can be used to find y, the total amount of money that the magnet spent on art supplies?

$(2.75 + 1.50)x = y$

A. y = 2.75 + x + 1.50
B. y = 4.25 + x

C. y = x + 2.75
D. y = 4.25x

3. The triangles are similar. Approximate length of DE.

	W	O	N
height	X	10
base	10	12

4. Choose the answer that represents the following expression in simplest form: $4(x + 2) - 3(2x - 1)$.

$$4x + 8 - 6x + 3$$
$$-2x + 11$$

A. 10x + 11
B. -2x + 11

C. -2x + 5
D. 10x + 5

5. At DFW Airport, 8 planes land every 6 minutes. At Love Field airport 5 planes land every 12 minutes. How many more planes land in an hour at DFW airport than at Love Field airport?
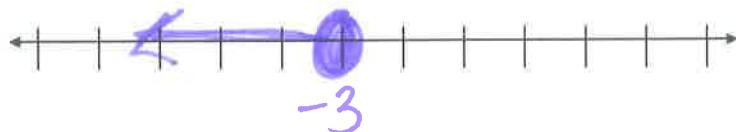
W	planes O	time N
DFW	8	6
LoveField	5	12

DFW one hour: 8 × 10 = 80
Love Field one hour: 5 × 5 = 25

80 - 25

$\boxed{55 \text{ more planes}}$

6. Solve the following for x and graph the solution on the number line below.

$$\frac{-12}{4} \geq \frac{4x}{4}$$

$$-3 \geq x$$

-3

7. Mrs. Himler solved the following equation using the steps shown below. What operation did she perform to get from Step 2 to Step 3?

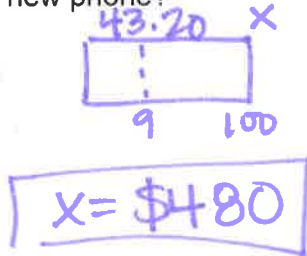| Step 1 | 2(x + 5) = x - 1 |
Step 2	2x + 10 = x - 1
Step 3	x + 10 = -1
Step 4	x = -11

subtracted x on both sides

8. Which situation best represents the expression 3x + 12?

A. The amount of money Alberto earns if he mows 3 yards at $12 each and weeds x flower beds.
B. The total bill for 3 people to eat dinner if each meal costs $12.
C. Jose bought 3 shirts at x dollars each and a pair of sunglasses for $12.
D. The number of tickets purchased for $12 each in the first 3 rows if they buy x number of seats.

9. Alexandria paid 9% tax on a new iPhone 5. She paid $43.20 in taxes. What was the selling price of her new phone?

43.20 x

9 100

$$x = \$480$$

10. The perimeter of a rectangle is 46 cm. The length is (3x+3) and the width is (x-4). Solve for x and find the length of each side.

$3x+3$
$x-4$
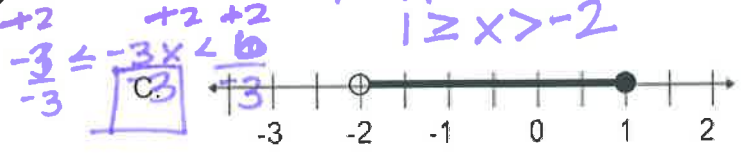
$6 - 4 = 2\,cm$
$3 \cdot 6 + 3 = 21\,cm$

$2(3x+3) + 2(x-4) = 46$
$6x + 6 + 2x - 8 = 46$
$8x - 2 = 46$
$8x = 48$
$x = 6$

11. Which number line below matches the inequality $-1 \le -3x + 2 < 8$?   FLIP IT

-2 $+2$ $+2$

$-3 \le -3x < 6$
$\dfrac{-3}{-3}$

$1 \ge x > -2$

C

A.
(number line from -3 to 2, closed at -1, open at 2)

C.
(number line from -3 to 2, open at -2, closed at 1)

B.
(number line from -3 to 2, closed at -2, open at 1)

D.
(number line from -3 to 2, open at -2, closed at 2)

12. Anna helps her grandmother at the Farmer's Market. A mixed variety of apples are sold in crates of 20. In each crate of 20, there are usually 3 Granny Smith apples. If Anna sells 15 crates of apples, how many Granny Smith apples did she sell? What percent of the total apples Anna sold were Granny Smith?

	O	N
granny smith	3	x
total	20	$15 \cdot 20$ 300

45 granny Smith apples

$$\dfrac{45}{300} = \dfrac{x}{100} \quad \boxed{15\%}$$

13. Solve the equation. $\dfrac{-2x+3}{5} > 3$ for x.

$-2x + 3 > 15$
$\quad -3 \quad -3$
$\dfrac{-2x}{-2} > \dfrac{12}{-2}$

$\boxed{x < -6}$
FLIP IT

14. Solve the equation $5x - 4y = 10$ for y.

$-5x \qquad -5x$

$\dfrac{-4y}{-4} = \dfrac{10 - 5x}{-4}$

$$\boxed{y = \dfrac{10 - 5x}{-4}}$$

OR

$$y = \dfrac{10}{-4} - \dfrac{5x}{-4}$$