Name: KEY Class: _____ Date: _____ ID: A

Practice Test 3B

Multiple Choice

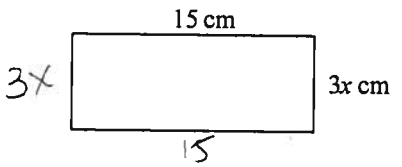
Identify the choice that best completes the statement or answers the question.

A 1. Which equation is an identity?
a. $5w + 6 - w = 6w - 2(w - 3)$
b. $5y + 9 = 5y - 4$
c. $15 - (6v + 5) = -6v - 10$
d. $6m - 3 = 7m + 4 - m$

A 2. Write the conversion factor for converting centimeters to meters.
a. $\frac{100\text{ cm}}{1\text{ m}}$ b. $\frac{10\text{ m}}{1\text{ cm}}$ c. $\frac{100\text{ m}}{1\text{ cm}}$ d. $\frac{100\text{ cm}}{10\text{ m}}$

Short Answer

3. answer: x = 2 The perimeter of the rectangle is 42 cm. Find the value of x.



4. *answers: length =* 13 cm *and width =* 8 cm

The length of a rectangle is 3 centimeters less than twice its width. The perimeter of the rectangle is 42 cm. What are the dimensions of the rectangle?

5. answer: 3 Solve the equation. $30 - 10 + 6g = 38$

6. answer: 7 Solve the equation. $3p - 1 = 5(p - 3)$

7. answer: 1 Solve the equation. $5x - 8 = 2x - 5$

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8. answer: 3 Solve the equation. $2(y + 2) = 10$

$2y + 4 = 10$
$-4 \quad -4$
$2y = 6$
$y = 3$

9. answer: 24 Solve the proportion. $\frac{3}{4} = \frac{18}{x}$

$3x = 72$
$x = 24$

10. answer: -24 Solve the proportion. $\frac{(x+8)}{3} = \frac{4}{19}$

$19(x+8) = 12$
$19x + 152 = 12$
$19x = -140$
$x = -7.37$

11. answer: -9 Solve the equation. $-6y + 14 + 4y = 32$

$-2y + 14 = 32$
$-14 \quad -14$
$-2y = 18$
$y = -9$

12. The sum of two consecutive integers is 35. Write an equation that models this situation and find the values of the two integers.

Equation/Work:

let x = 1st integer
$x+1$ = 2nd integer

$x + (x+1) = 35$
$2x + 1 = 35$
$2x = 34$
$x = 17, 18$

Answer: 17, and 18

13. The sum of three consecutive odd integers is -117. Write an equation to model this situation, and find the values of the four integers.

Equation/Work:

let x = 1st int.
$x+2$ = 2nd int.
$x+4$ = 3rd int.

$x + (x+2) + (x+4) = -117$
$3x + 6 = -117$
$-6 \quad -6$
$3x = -123$
$x = -41, -39, -37$

Answer: -41, -39, -37, and

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14. A van travels 240 miles on 12 gallons of gas. Write and solve a function to find how many gallons the van needs to travel 460 miles.

$\frac{240 \text{ miles}}{12 \text{ gal}} = \frac{460 \text{ miles}}{x}$ $240x = 5520$ $x = 23 \text{ gal}$

15. A car is driving at a speed of 45 mi/h. What is the speed of the car in feet per minute?

$\frac{45 \text{ miles}}{1 \text{ hr}} \left| \frac{5280 \text{ ft}}{1 \text{ min}} \right| \frac{1 \text{ hr}}{60 \text{ min}} = \frac{237600}{60} = 3960 \frac{\text{ft}}{\text{min}}$

Solve the equation.

16. $7d + 4d + 5d - 9 = 3d$

$16d - 9 = 3d$ $-16d \quad -16d$ $-9 = -13d$ $\frac{-9}{-13} = \frac{-13d}{-13}$ $d = \frac{9}{13} = 0.692$

17. Write the conversion factor for seconds to minutes. Use the factor to convert 120 seconds to minutes.

$60 \text{ sec} = 1 \text{ min}$. $\left(\frac{120 \text{ sec}}{1}\right)\left(\frac{1 \text{ min}}{60 \text{ sec}}\right) = 2 \text{ min}$.

18. answer: 5 Solve the equation. $2x - 4 = 3x - 9$

$-2x \quad -2x$ $-4 = 1x - 9$ $+9 \quad +9$ $5 = x$

19. answer: 15 Solve the equation. $-7y + 11 + 3y = -49$

$-4y + 11 = -49$ $-11 \quad -11$ $\frac{-4y}{-4} = \frac{-60}{-4}$ $y = 15$

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20. answer: 20 Solve the proportion. $\frac{9}{10} = \frac{18}{x}$

$9x = 180$

$x = 20$

21. answer: 19.7 Solve the proportion. $\frac{7}{6} = \frac{-23}{x}$

$7x = -138$

$x = 19.71$

22. answer: 2 Solve the equation. $46 + 9 + 9w = 73$

$55 + 9w = 73$

$-55 \quad -55$

$9w = 18$

$w = 2$

23. answer: 14 Solve the equation. $2p - 4 = 3(p - 6)$

$2p - 4 = 3p - 18$

$-2p \quad -2p$

$-4 = 1p - 18$

$+18 \quad +18$

$14 = p$

24. answer: 12.0625 Solve the proportion. $\frac{(x-9)}{7} = \frac{7}{16}$

$16(x-9) = 49$

$16x - 144 = 49$

$+144 \quad +144$

$16x = 193$

$x = 12.0625$

25. The sum of three consecutive integers is 72. Write an equation that models this situation and find the values of the two integers.

Equation/Work:

let x = 1st int

$x + 1$ = 2nd int

$x + 2$ = 3rd int

$x + (x+1) + (x+2) = 72$

$3x + 3 = 72$

$-3 \quad -3$

$3x = 69$

$x = 23$

Answer: 23, 24 and 25