Unit 1 Review

(Chapters 1-2)

SCORE _____

1. Write a verbal expression for $4r + 9$.

4 times r plus 9

1. _____

2. Write an algebraic expression for *the difference of 5 and n cubed.*

2. $n^3 - 5$

$|2 + 80 - 21| = 80 - 9$

3. Evaluate $2x + 5y^2 - 3z$ if $x = 6$, $y = 4$, and $z = 7$.

$2(6) + 5(4)^2 - 3(7) = 712 + 5(16) - 21$

3. 71

4. Name the property used in the equation $1 = 6n$. Then find the value of n.

$C \quad 6$

4. $n = \frac{1}{6}$

For Questions 5-7, simplify each expression.

5. $2t^2 + 5t^2 + 3t = 7t^2 + 3t$

5. $7t^2 + 3t$

6. $7(r + 2t) - 5t$

$7r + 14t - 5t = 7r + 9t$

6. $7r + 9t$

7. $5(4a + b) + 3a + b$

$20a + 5b + 3a + b =$

7. $23a + 6b$

8. Find the solution set for $3b - 4 = 8$ if the replacement set is $\{1, 2, 3, 4, 5\}$.

$\frac{36}{3} = \frac{12}{3} \quad b = 4 \quad 3(4) - 4 - 8 \checkmark \quad 12 - 4 = 8$

8. $b = 4$

For Questions 9-10, determine whether each relation is a function.

9. $\{(1, 5), (2, 4), (3, 5), (4, 9)\}$
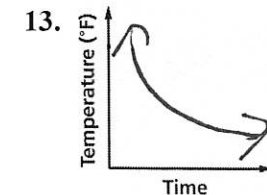
10. $x = -2$

9. yes

10. No

11. If $f(n) = 6 - 2n$, find $f(-1)$.

$f(-1) = 6 - 2(-1) = 6 + 2 = 8$

11. $f(-1)$

12. *True* or *False*: A linear graph can have a maximum or a minimum.

12. False

13. Draw a reasonable graph showing the relationship between the temperature of a pizza as it is removed from an oven and placed on a counter at room temperature, and time.

13.

14. The sides of an equilateral triangle measure $(2x + 4)$ units. What is the perimeter?

$3(2x + 4)$

14. $6x + 12$

15. Translate $m^2 - 4 = 2r + 1$ into a sentence.

m square minus 4 1's

15. $2r$ plus 1.

16. Write a problem based on the given information.
h = the height of a math textbook;
$h + 2$ = the height of a science textbook
$4h + 2(h + 2)$

16.

Unit 1 Review *(continued)*

Solve each equation.

17. $m - 5 = -23$

$\frac{+5 \quad +5}{m = -18}$

18. $-4 = 8 + k$

$\frac{-8 \quad -8}{-12 = k}$

19. $\frac{a}{2} + 9 = 30$

$\frac{-9 \quad -9}{2 \cdot \frac{a}{2} = 21 \cdot 2}$ $a = 42$

20. $(-\frac{7}{2})(-\frac{2}{7}x) = (-16)(-\frac{7}{2})$ $(-\frac{16}{1})(-\frac{7}{2}) = 56$

21. $5(c + 3) = 15 + 2(2c - 1)$

$\frac{5c + 15 = 15 + 4c - 2}{-4c \qquad -4c}$ $c = -2$

22. $10(a + 1) - 14a = 9 - (4a - 1)$

$10a + 10 - 14a = 9 - 4a + 1$

$\frac{-4a}{} \; = 10 - 4a$

23. $\frac{7}{10} = \frac{3}{x+1}$ $7(x+1) = 3(10)$ $7x = 21$
$7x + 7 = 30$ $x = 3$

For Questions 24 and 25, evaluate each expression if $a = 3$, $b = 4$, and $c = 9$.

24. $2|a - b| + |c|$

$2|3 - 4| + |9| = 2|-1| + 9 = 2(1) + 9 = 2 + 9 = 11$

25. $c - b|1 - a|$

$9 - 4|1 - 3| = 9 - 4|-2| = 9 - 4(2) = 9 - 8 = 1$

26. Solve $|2x - 1| = 5$. Then graph the solution set.

$2x - 1 = 5$ $2x - 1 = -5$
$2x = 6 \quad x = 3$ $2x = -4 \quad x = -2$

27. Determine whether $\frac{4}{9}$ and $\frac{20}{45}$ are equivalent ratios. Write *yes* or *no*.

$\frac{4 \times 5}{9 \times 5} = \frac{20}{45}$

28. A magazine is on sale for 15% off the original price. If the original price of the magazine is $4.60, what is the discounted price?

$.85(4.60)$

29. Solve $\frac{t - v}{r} = k$, for v.

$-v = 4r - t$
$t - v = 4r$ $v = t - 4r$

30. How many pounds of peanuts costing $3.00 a pound should be mixed with 4 pounds of cashews costing $4.50 a pound to obtain a mixture costing $3.50 a pound?

$3x + 4(4.50) = 3.50(x + 4)$

$3x + 18 = 3.5x + 14$

$\frac{4}{.5} = \frac{.5x}{.5}$ $x = 8$

Answers:

17. $m = -18$

18. $k = -12$

19. $a = 42$

20. $x = 56$

21. $c = -2$
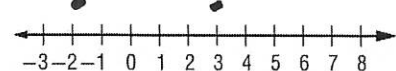
22. all real #'s

23. $x = 3$

24. 11

25. 1

26. $x = -2, 3$

27. yes

28. 3.91

29. $v = t - 4r$

30. $x = 8$