

Chapter 1 Review Sheet

1. Simplify: $5(6 - 4^3) + 7$
2. Evaluate: $(2a \div 3 + 3) - 4b$, $a = 15$ and $b = -6$.
3. Proper aerobic exercise involves exercising at a person's correct training heart rate. To find the correct training heart rate the following formulas are used:
Training Heart Rate = (Maximum Heart Rate - Resting Heart Rate) \times 0.65 + Resting Heart Rate
Maximum Heart Rate = $220 - \text{person's age}$
Find the training heart rate for a 42-year old with a resting heart rate of 70 beats per minute.
[A] 140.2 [B] 153.6 [C] 132.4 [D] 136.8
4. The formula for the surface area of a rectangular prism is $SA = 2(lh + lw + wh)$. Find the surface area of a rectangular prism with a length of 7 inches, a width of 4 inches, and a height of 3 inches.
[A] 134 in^2 [B] 148 in^2 [C] 122 in^2 [D] 168 in^2
5. Use the formula $A = p + prt$ to find the amount of money in a savings account after 4 years, starting with a principal of \$2300, and an interest rate of 5%.
6. Find the surface area of a cylinder with a radius of 8 inches and a height of 10 inches. Use the formula $SA = 2\pi rh + 2\pi r^2$.

Solve:

7. $5x + 1 = -8x + 7$
8. $\frac{2m}{7} + 1 = \frac{5}{14}$
9. $3(2 - 6x) + 4(3x + 4) = -8$

Solve for the specified variable:

10. $C = 8a^2 + b$, for b [A] $b = \frac{8a^2}{C}$ [B] $b = 8a^2 - C$ [C] $b = \frac{C}{8a^2}$ [D] $b = C - 8a^2$
11. $V = lwh$, for h

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Evaluate:

12. $7 + 2|n - 5|$, $n = 3.6$

[A] 7.6 [B] 9.8 [C] 24.2 [D] 4.2

13. $|6a - 3b| + |5b - 4a|$, $a = 3$ and $b = 7$

Solve:

14. $|2x - 1| = -1$

15. $|2x - 3| = 1$

16. Solve and graph the solution set:

$$4(x + 1) \geq 3x + 9$$

17. In order to qualify for a home loan 35% of a person's monthly income must be greater than or equal to the monthly mortgage payment. If the mortgage is \$1050 a month, which inequality shows how much the monthly income has to be in order to qualify?

[A] $x \geq \$3000$ [B] $x \geq \$3675$

[C] $x \geq \$1050$ [D] $x \geq \$2350$

18. Arturo's uncle has given him \$300 to spend on college tests, lab equipment, or anything else he needs. Arturo purchases one chemistry book for \$83, one physics book for \$95 and a pH analysis kit for \$65. Which inequality shows how much money Arturo has left to spend on other necessities?

[A] $(83 + 95 + 65)n \geq 300$

[B] $83 + 95 + 65 + n \leq 300$

[C] $65 + 95 + 83 \geq 300n$

[D] $(83 + 95 + 65) - 300 \leq n$

19. In order to qualify for a credit card, 15% of a person's yearly income must be greater than or equal to the line of credit. If a person's line of credit is \$5000, how much is her yearly income? Write an inequality to solve the problem.

20. A supervisor for a shipping company expects a worker to complete 25 orders for shipping and have one fifteen-minute break in less than 2.5 hours. Write an inequality that represents the time to complete one order. How much time should be spent on one order?

Solve and graph:

21. $3x - 2 \geq 19$ or $\frac{x}{3} \leq -3$

22. $4x - 4 > -20$ and $3x - 3 < 3$

23. $|x - 4| \leq 2$