9 **Chapter 9 Test, Form 2B** SCORE _____

Write the letter for the correct answer in the blank at the right of each question.

1. For what value(s) of x is the expression $\dfrac{x^2 - 4x + 4}{2x^2 - 3x - 2}$ undefined?

  A $-\dfrac{1}{2}, 0, 2$ **B** $-\dfrac{1}{2}, 2$ **C** $-2, \dfrac{1}{2}$ **D** $-\dfrac{1}{2}$ **1.** _____

Simplify each expression.

2. $\dfrac{t^2 - 2t - 3}{t^2 - 1} \cdot \dfrac{3t - 3}{t^2 - 4t + 3}$

  F $\dfrac{t^2 - 6t + 9}{3t - 3}$ **G** $\dfrac{3(t - 3)}{t^2 - 1}$ **H** 3   **J** $\dfrac{3}{t - 1}$ **2.** _____

3. $\dfrac{m + 2f}{6} \div \dfrac{m^2 - 4f^2}{10}$

  A $\dfrac{5}{3(m - 2f)}$ **C** $\dfrac{4}{m - 2f}$

  B $\dfrac{5}{3(m + 2f)}$ **D** $\dfrac{m^3 - 4mf^2 + 2m^2f - 8f^3}{60}$ **3.** _____

4. $\dfrac{\frac{3b^2 - 12}{6b^2 + 12b}}{\frac{5b - 10}{10b^2 + 20b}}$

  F $\dfrac{b + 2}{b - 2}$ **G** $b - 2$ **H** $2b + 4$ **J** $b + 2$ **4.** _____

5. $\dfrac{30}{m^2 - 25} + \dfrac{3}{m - 5}$

  A $\dfrac{3m + 25}{m^2 - 25}$ **B** $\dfrac{33}{m^2 - 25}$ **C** $\dfrac{3}{m - 5}$ **D** $\dfrac{3(m + 15)}{(m + 5)(m - 5)}$ **5.** _____

6. $\dfrac{7}{m - 6} - \dfrac{m}{6 - m}$

  F $\dfrac{7 - m}{m - 6}$ **G** $\dfrac{m + 7}{m - 6}$ **H** $\dfrac{m - 7}{m - 6}$ **J** $\dfrac{7}{6 - m}$ **6.** _____

7. Find the LCM of $7m - 21$ and $14m - 42$.

  A $m - 3$ **B** $98(m - 3)$ **C** $7(m - 3)$ **D** $14(m - 3)$ **7.** _____

8. What is the LCM of $t^2 - t - 12$ and $t^2 + 2t - 24$?

  F $(t + 3)(t - 4)(t + 6)$ **H** $(t - 3)(t + 4)(t + 6)$

  G $(t - 3)(t - 4)(t - 6)$ **J** $(t + 3)(t + 4)(t - 6)$ **8.** _____

9. Determine the equations of any vertical asymptotes of the graph of $f(x) = \dfrac{2x + 3}{x^2 + 2x - 3}$.

  A $x = -1$ **B** $x = 3$ **C** $x = -3, x = 1$ **D** $f(x) = 2$ **9.** _____

10. Determine the values of x for any points of discontinuity in the graph of $f(x) = \dfrac{x + 3}{x^2 + 5x + 6}$.
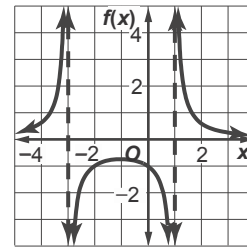
  F $x = -3$ **G** $x = 3$ **H** $x = -2, x = -3$ **J** $x = -2$ **10.** _____

11. Which rational function is graphed?

    A $f(x) = \frac{x-3}{x-1}$ **C** $f(x) = \frac{3}{(x+3)(x-1)}$

    B $f(x) = \frac{x-3}{x+1}$ **D** $f(x) = \frac{3}{(x-3)(x+1)}$

11. _____

12. If y varies jointly as x and z and $y = 60$ when $x = 10$ and $z = -3$, find y when $x = 8$ and $z = 15$.

    F -240 **G** 15 **H** 240 **J** -15

12. _____

13. **SALES** An appliance store manager noted that weekly sales varied directly with the amount of money spent on advertising. If last week's sales were $10,000 and $2000 was spent on advertising, what should sales be during a week that $1200 was spent on advertising?

    A $4800   **B** $6000   **C** $16,667   **D** $50,000

13. _____

14. If y varies inversely as x and $y = 5$ when $x = 5$, find y when $x = 45$.

    F $\frac{3}{2}$ **G** $\frac{2}{3}$ **H** $\frac{5}{9}$ **J** $\frac{9}{5}$

14. _____

15. The distance a car can travel on a certain amount of fuel varies inversely with its speed. If a car traveling 50 miles per hour can travel 336 miles on 10 gallons of fuel, how far could the car travel on 10 gallons of fuel at 60 miles per hour?

    A 315 mi   **B** 320 mi   **C** 403.2 mi   **D** 280 mi

15. _____

16. The equation $15z = y$ represents a(n) __?__ variation.

    F direct   **G** joint   **H** inverse   **J** combined

16. _____

17. The equation $\frac{a}{5} = bc$ represents a(n) __?__ variation.

    A direct   **B** joint   **C** inverse   **D** combined

17. _____

18. Solve $\frac{n}{n-3} + n = \frac{7n-18}{n-3}$.

    F 3   **G** 6   **H** 3, 6   **J** $-3, 6$

18. _____

19. Solve $7 - \frac{3}{m} > \frac{18}{m}$.

    A $m < 0$ or $m > 3$ **C** $m > 3$

    B $0 < m < 3$ **D** $m < 0$

19. _____

20. The sum of a number and 16 times its reciprocal is 10. Find the number(s).

    F -8 or -2 **G** 2 or 8   **H** 4   **J** ± 4

20. _____

Bonus Simplify $\dfrac{1 - \frac{2}{x}}{1 - \frac{1}{x} - \frac{2}{x^2}}$.

B: _____

Assessment