PRECALC AB PERIOD: _____ NAME:_____

Pre-Calc AB: Algebra Review

1. Find the equation of the line that passes through the point $(-4, -3)$ and is parallel to the line $3x - 6y = -5$

   (a) $3x - 6y = 6$
   (b) $3x + 6y = -5$
   (c) $-4x - 3y = -5$
   (d) $3x - 6y = 15$

2. Solve by completing the square $2x^2 + 8x - 4 = 0$

   (a) $2 \pm 2\sqrt{6}$
   (b) $2 \pm \sqrt{6}$
   (c) $-2 \pm 2\sqrt{6}$
   (d) $-2 \pm \sqrt{6}$

3. Simplify by factoring the numerator: $\dfrac{x^{8b} - y^{8b}}{x^{4b} + y^{4b}}$

   (a) $x^{4b} + y^{4b}$
   (b) $x^{2b} - y^{2b}$
   (c) $x^{4b} - y^{4b}$
   (d) $x^{2b} + y^{2b}$

4. Factor: $5x^5y^6 + 320x^5z^12$

   (a) $5x^5(y^2 + 4z^4)(y^4 - 4y^2z^4 + 16z^8)$
   (b) $5x^5(y^2 + 4z^4)(y^4 + 8^2z^4 + 16z^8)$
   (c) $(5y^2 + 4z^2)(y^2 + 20z^4)(5y^4 + 16z^4)$
   (d) $x^5(5y^2 + 4z^4)(y^2 + 20z^4)^2$

5. Simplify: $\dfrac{\frac{5}{2x} + \frac{1}{3x}}{\frac{2}{x} - \frac{3}{2x}}$

   (a) $\frac{4}{12x^2}$
   (b) $\frac{17}{3}$
   (c) $\frac{1}{2x^2}$
   (d) $\frac{3}{17}$

6. Solve: $\frac{1}{2} + \frac{3}{x+3} = \frac{4}{5}$

   (a) 6
   (b) 7
   (c) 9
   (d) 4

7. Solve: $\sqrt{x+2} + \sqrt{x} = -5$

   (a) No solution
   (b) $\frac{23}{2}$
   (c) $\frac{529}{100}$
   (d) 529

8. Solve for t: $y = w\left(\frac{sv}{t} + \frac{x}{u}\right)$

   (a) $t = \frac{uy + xw}{suwv}$
   (b) $t = \frac{suvw}{uy - xw}$
   (c) $t = \frac{xwu}{uy + svw}$
   (d) $t = \frac{xwu}{uy - svw}$

9. Simplify by factoring the numerator: $\frac{x^{12c} - y^{12c}}{x^{6c} + y^{6c}}$

10. Write the equation of the line that passes through the point $(-4, -2)$ and is perpendicular to $-3x = -6y + 6$.

11. Find the equation of the line that passes through the point $(5, 1)$ and is parallel to the line $3x - 5y = -2$.

12. Find the equation of the line that passes through the point $(2, -6)$ and is parallel to the line $5x + 4y = 1$.

    (a) $2x - 6y = 1$
    (b) $5x + 4y = -14$
    (c) $5x + 4y = -22$
    (d) $5x - 4y = 1$

13. Solve by completing the square: $-2 + 2x^2 = -6x$

14. Solve by completing the square: $-3 + x^2 = 2x$

15. Factor: $15x^{3n+2} + 9x^{7n+1}$

16. Simplify by factoring the numerator: $\frac{x^{8a} - y^{8a}}{x^{4a} + y^{4a}}$

17. Simplify by factoring the numerator: $\dfrac{x^{6f} - y^{6f}}{x^{3f} + y^{3f}}$

18. Simplify by factoring the numerator: $\dfrac{x^{12e} - y^{12e}}{x^{6e} - y^{6e}}$

19. Solve for o: $t = r\left(\dfrac{nq}{o} + \dfrac{s}{p}\right)$

    (a) $o = \dfrac{pt + sr}{nprq}$

    (b) $o = \dfrac{srp}{pt - nqr}$

    (c) $o = \dfrac{nprq}{pt - sr}$

    (d) $o = \dfrac{srp}{pt + nqr}$

20. Solve for x: $\ln x + \ln 4 = \ln(x - 3)$

    (a) $x = -1$

    (b) $x = 1$

    (c) $x = \frac{17}{4}$

    (d) No Solution

1. A
2. D
3. C
4. A
5. B
6. B
7. A
8. B
9. $x^{6c} - y^{6c}$
10. $6x + 3y = -30$
11. $3x - 5y = 10$
12. B
13. $\frac{-3 \pm \sqrt{13}}{2}$
14. $3, -1$
15. $3x^{3n+2}(5 + 3x^{4n-1})$
16. $x^{4a} - y^{4a}$
17. $x^{3f} - y^{3f}$
18. $x^{6e} + y^{6e}$
19. C
20. D