Name: Key **Date:** **Period:**

Day 2 of 4

19. Factor $x^2 + 12x + 36$

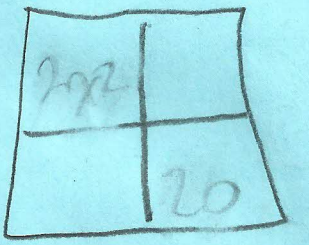
$(x+6)(x+6)$

20. Factor $p^2 + 12pq + 11q^2$

$(p+11q)(p+q)$

21. Factor $2x^2 - 18x + 20$ GCF First!

$2(x^2-9x+10)$



22. Factor $x^2 - 144$

$(x+12)(x-12)$

23. Factor $25x^2 - 30x + 9$

$ac = 25(9)$
$= 225$

$25x^2$	$-15x$	$5x$
$-15x$	9	-3
$5x$	-3	

A. $5x(5x-6+3)$
B. $(5x-3)(5x+3)$
C. $(5x-3)(5x-3)$
D. $(5x-1)(5x+9)$

24. Factor $16x^3 + 8x^2 + 6x + 3$

Factor by Grouping

$(16x^3 + 8x^2) + (6x+3)$

$8x^2(2x+1) + 3(2x+1)$

$(8x^2+3)(2x+1)$

25. Simplify $3\sqrt{50} + \sqrt{242}$

$3\sqrt{25\cdot 2} + \sqrt{121\cdot 2}$

$= 3(5)\sqrt{2} + 11\sqrt{2}$

$= 15\sqrt{2} + 11\sqrt{2}$

$= 26\sqrt{2}$

26. Simplify $\sqrt{3}(\sqrt{4}+7)$

$\sqrt{12} + 7\sqrt{3}$

$\sqrt{4\cdot 3} + 7\sqrt{3}$

$= 2\sqrt{3} + 7\sqrt{3}$

$= 9\sqrt{3}$

27. Which choice shows the solution(s) of $\sqrt{2x+1} = \sqrt{3x-5}$?

Square both sides

$(\sqrt{2x+1})^2 = (\sqrt{3x-5})^2$

$2x+1 = 3x-5$

$-2x \quad -2x$

$1 = x-5$

$+5 \quad +5$

$x = 6$

28. The equation $v = 8\sqrt{h-2r}$ gives the velocity (v) in feet per second of a car at the top of the loop of a roller coaster. Find the radius (r) of the loop when the hill is 199 feet high (h) and the velocity of the car is 15 feet per second.

$\frac{15}{8} = \frac{8\sqrt{199-2r}}{8}$

$\left(\frac{15}{8}\right)^2 = \left(\sqrt{199-2r}\right)^2$

$\frac{225}{64} = 199-2r$

$3.51 = 199-2r$

$-199 \quad -199$

$\frac{-195.49}{-2} = \frac{-2r}{-2}$

$r \approx 97.7$

29. Which of the functions below creates the graph at the right?

A. $y = \sqrt{x+2}$
B. $y = \sqrt{x-2}$
C. $y = \sqrt{x}+2$
D. $y = \sqrt{x}-2$