NAME _____ DATE _____ PERIOD _____

Chapter 9 Practice Test *(continued)*

9. Which value of c makes $y^2 + 8y + c$ a perfect square trinomial?

9. $c = 16$

$\frac{8}{2} = (4)^2 = 16$

10. Which equation is equivalent to $2x^2 + 4x - 6 = 0$?

F $(x + 1)^2 = 2$ **G** $(x - 1)^2 = 4$ **H** $(x - 1)^2 = 2$ **J** $(x + 1)^2 = 4$

10. J

$\frac{2x^2}{2} + \frac{4x}{2} - \frac{6}{2} = \frac{0}{2}$ $x^2 + 2x - 3 = 0$

$x^2 + 2x + 1 = 3 + 1$

$\left(\frac{2}{2}\right)^2 = (1)^2$

$(x+1)(x+1) = 4$

$(2x+5)(x-1)$ $x-1=0$ $2x-5=0$

11. Solve the equation $2x^2 + 3x - 5 = 0$ by using the Quadratic Formula. **11.** _____

$a = 2$
$b = 3$
$c = -5$

$$x = \frac{-3 \pm \sqrt{3^2 - 4(2)(-5)}}{2(2)}$$

$$= \frac{-3 \pm \sqrt{9 + 40}}{4} = \frac{-3 \pm \sqrt{49}}{4}$$

$$= \frac{-3 \pm 7}{4}$$

$$= \frac{4}{4}, \frac{-10}{4}$$

$$= 1, \frac{-5}{2}$$

$a=3 \quad b=-8 \quad c=10$

12. Determine the number of real solutions of $y = 3x^2 - 8x + 10$.

$b^2-4ac \quad (-8)^2-4(3)(10)$

$64 - 120 = -56$

12. No solution

2 rational solutions

13. solutions

13. Determine the number of real solutions of $n^2 - 5n - 6 = 0$.

$a=1 \quad b=-5 \quad c=-6 \qquad 25+24=49$

$(-5)^2-4(1)(-6)$

14. Which step is *not* performed in the process of solving $r^2 + 8r + 5 = 0$ by completing the square?

~~A Subtract 5 from each side.~~ ~~C Add 16 to each side.~~

B Factor $r^2 + 8r$.

~~D Take the square root of each side.~~

14. _____

15. _____

$r^2+8r+5=0$

$r^2+8r+16=-5+16$

$(r+4)(r+4)=11$

$\frac{8}{2}=(4)^2=16$

$\sqrt{(r+4)^2}=\sqrt{11}$

15 $12v^2 + v - 6 = 0$

$a = 12$, $b = 1$, $c = -6$

$x = \frac{-1 \pm \sqrt{1^2 - 4(12)(-6)}}{2(12)}$

$x = \frac{-1 \pm \sqrt{289}}{24}$

$= \frac{-1 \pm 17}{24}$ ...

15. Solve the equation $12v^2 - 6 = -v$ by using the Quadratic Formula.

16. G

16. Look for a pattern in the table of values to determine which model best describes the data.

x	0	1	2	3
y	0	2	8	18

2 6 10

4 4

2nd diff.

F linear **G** quadratic **H** exponential **J** none of these

17. C

17. Which function best models the data in Question 16?

A $y = 2x$ **B** $2x + 1$ **C** $y = 2x^2$ **D** $y = 2^x$

18. G

18. What is the range of $y = |3x + 1|$? (fair warning- know all characteristics of the graph!)

F {all real num.} **G** $\{y \mid y \geq 0\}$ **H** $\{y \mid y \geq 1\}$ **J** $\left\{y \mid y \geq \frac{1}{3}\right\}$

B.

$3x + 1 = 0$

$x = -\frac{1}{3}$

$-\frac{1}{3}$