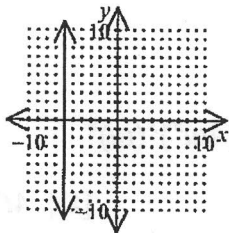


Algebra 1
Spring Final Study Guide
Chapters 7, 8, 10, and 11

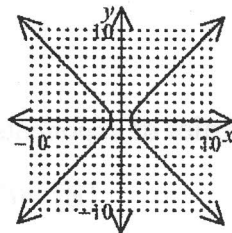
- Use the properties of exponents to rewrite the expression. $(4tu^5)^3(tu)^6$
[A] $64t^9u^{11}$ [B] $4t^9u^{21}$ [C] $64t^9u^{21}$ [D] $4t^4u^{21}$
- What is 3,600,000 in scientific notation?
[A] 3.6×10^{-5} [B] 3.6×10^{-6} [C] 3.6×10^7 [D] 3.6×10^6
- The number of music CDs sold in 1993 by one company was approximately 1.4×10^6 . The number of music CDs sold by the same company in 2001 was approximately 6.5×10^7 . What is the difference in CDs sold between 1993 and 2001?
[A] 750,000 [B] 6,360,000 [C] 63,600,000 [D] 7,500,000
- Use the properties of exponents to rewrite the expression. $\frac{3^0 t^9 w^5 u^9}{t^2 w^9 u^9}$
[A] $\frac{t^7}{w^4}$ [B] $\frac{w^4}{t^7}$ [C] $\frac{t^7 u^{18}}{w^4}$ [D] $\frac{w^4}{t^7 u^{18}}$
- Which expression is equivalent to $a^4 \cdot a^{-9}$?
[A] a^5 [B] a^{36} [C] $\frac{1}{a^5}$ [D] $\frac{1}{a^{36}}$
- Write 0.00399 in scientific notation.
[A] 0.399×10^{-2} [B] 3.99×10^{-3} [C] 399×10^{-5} [D] 399×10^{-4}

7. Which of the following graphs represents a function?

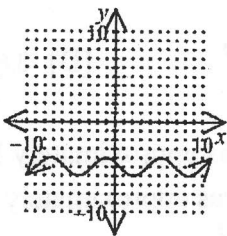
[A]



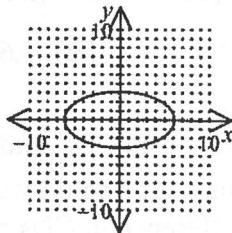
[B]



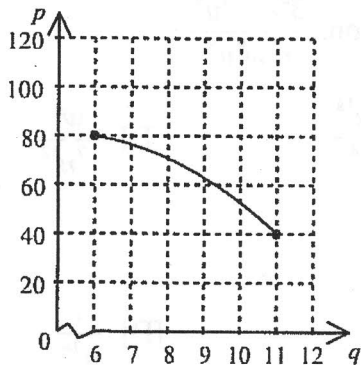
[C]



[D]



8. What is the domain of the function in the graph?



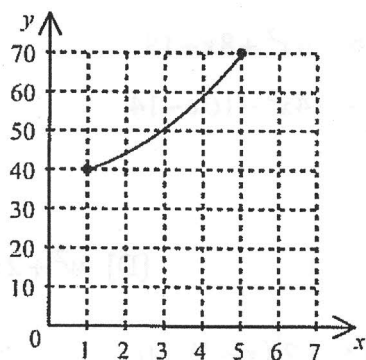
[A] $40 \leq q \leq 80$

[B] $6 \leq q \leq 11$

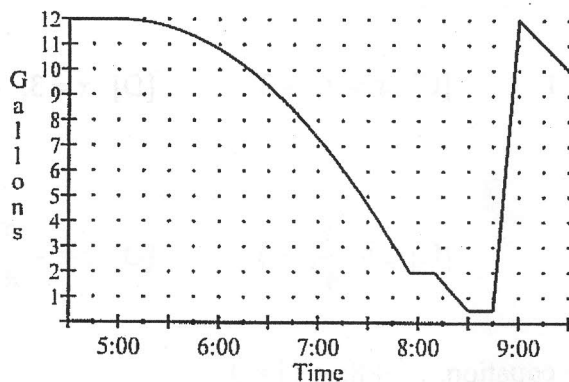
[C] $40 \leq p \leq 80$

[D] $6 \leq p \leq 11$

9. What is the range of the function in the graph?



- [A] $40 \leq y \leq 70$ [B] $1 \leq x \leq 5$ [C] $40 \leq x \leq 70$ [D] $1 \leq y \leq 5$
10. The graph below shows the amount of gas in Sharon's tank during a trip to her mother's house. At one point she stopped for 15 minutes at a rest stop. At what time did she stop?



- [A] 8:00 [B] 7:45 [C] 7:55 [D] 9:00
11. Let this table represent the function f . Find $f(8) - f(1)$.
- | | |
|-----|-----|
| x | y |
| 1 | 4 |
| 8 | -1 |
| 3 | 8 |
- [A] -5 [B] 2 [C] 7 [D] 4
12. Find $f(-2)$ given $f(x) = x^3 + 2x^2 - 17$. [A] -7 [B] -1 [C] -21 [D] -17

13. Rewrite $y = -4(x+2)^2 - 2$ in the general form, $y = ax^2 + bx + c$.

[A] $y = -4x^2 + 8x - 14$

[B] $y = -4x^2 + 8x - 18$

[C] $y = -4x^2 - 16x - 18$

[D] $y = -4x^2 - 16x - 14$

14. Expand the expression. $(w-1)^2$

[A] $w^2 - 2w + 1$

[B] $w^2 + 1$

[C] $w^2 - 1$

[D] $w^2 + 2w + 1$

15. Use the zero product property to solve the equation. $(3x+2)(x+3) = 0$

[A] $x = -2, -3$

[B] $x = 2, 3$

[C] $x = -\frac{2}{3}, -3$

[D] $x = \frac{2}{3}, 3$

Solve the equation by factoring.

16. $x^2 + 4x - 21 = 0$

[A] $x = 1, -21$

[B] $x = 21, -1$

[C] $x = 7, -3$

[D] $x = 3, -7$

17. $4x^2 - 9x - 9 = 0$

[A] $x = -\frac{3}{4}, 3$

[B] $x = \frac{3}{4}, 3$

[C] $x = \frac{3}{4}, -3$

[D] $x = -\frac{3}{4}, -3$

18. Use the quadratic formula to solve the equation. $x^2 + 8x + 11 = 0$

[A] $x = -4 + \sqrt{5}, -4 - \sqrt{5}$

[B] $x = 8 + 2\sqrt{5}, 8 - 2\sqrt{5}$

[C] $x = 4 + \sqrt{5}, 4 - \sqrt{5}$

[D] $x = -8 + 2\sqrt{5}, -8 - 2\sqrt{5}$

19. Line l has slope -3 . The line through which of the following pair of points is parallel to l ?

[A] $(4, 5), (-5, 2)$

[B] $(5, -5), (2, 4)$

[C] $(12, 8), (-5, 5)$

[D] $(9, -5), (2, 4)$

20. Find the midpoint of the segment between the points $(-5, -9)$ and $(-10, 18)$.

[A] $\left(-\frac{15}{2}, \frac{9}{2}\right)$

[B] $\left(\frac{5}{2}, -\frac{27}{2}\right)$

[C] $(-15, 9)$

[D] $(15, -9)$

