1. Write interval notation and graph the interval.

19

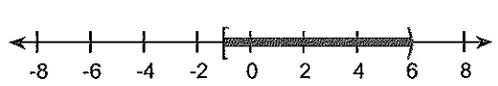
$\{x|-1<x\leq 6\}$

What is the interval?

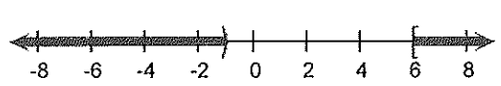
$(-1,6]$ (Type your answer in interval notation.)

Which graph is correct?

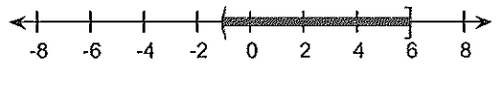
○A.



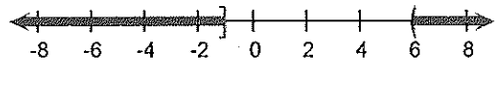
○B.



✓C.



○D.

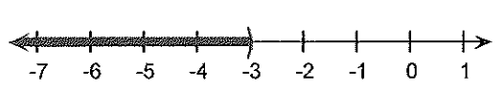


2. Write interval notation and graph the interval.

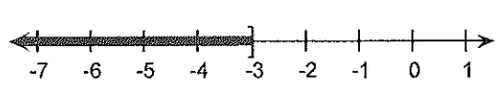
$\{x|x\leq -3\}$

Choose the correct graph.

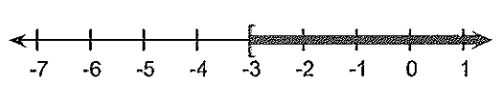
○A.



✓B.



○C.



What is the interval?

□

(Type your answer in interval notation.)

3. Find the absolute value.

$|-1.1|$

$|-1.1| = 1.1$

(Simplify your answer. Type an integer or a decimal.)

4. Find the distance between the points on a number line.

$-5, -65$

The distance is 60.

5. Find the distance between the given pair of points on the number line.

$-\frac{1}{2}, \frac{7}{4}$

The distance is $\frac{9}{4}$.

(Type an integer or a simplified fraction.)

6. First simplify the expression and then evaluate it. Assume $c \neq 0$.

$c^{-7} \cdot c^{7}$

$c^{-7} \cdot c^{7} = \boxed{c^{0} = 1}$

(Type in exponential form.)

$c^{0} = \square$

(Simplify your answer. Type an integer or a fraction.)

---

7. Simplify.

$(-3x^{-3})(7x^{-4})$

$(-3x^{-3})(7x^{-4}) = \boxed{\frac{15}{12}}$

---

8. Multiply and simplify.

$(-4x)^{2}(6x)^{3}$

Choose the correct answer.

A. $-3456x^{5}$

B. $-24x^{6}$

C. $3456x^{5}$

D. $(-24x)^{5}$

---

9. Divide and simplify.

$$\frac{-15m^{-19}n^{20}}{-55m^{-4}n^{4}}$$

$$\frac{-15m^{-19}n^{20}}{-55m^{-4}n^{4}} = \square$$

(Type exponential notation with positive exponents.)

---

10. Simplify.

$$\left(\frac{22x^{11}y^{-9}z^{6}}{11x^{7}y^{-2}z^{3}}\right)^{-2}$$

$$\left(\frac{22x^{11}y^{-9}z^{6}}{11x^{7}y^{-2}z^{3}}\right)^{-2} = \square$$

---

11. Divide and write the answer in scientific notation.

$$\frac{2.2\times10^{-3}}{8.8\times10^{-9}}$$

$\frac{2.2\times10^{-3}}{8.8\times10^{-9}}=\square$

(Use scientific notation. Use the multiplication symbol in the math palette as needed. Round to the nearest thousandth as needed.)

12. Simplify the expression.

$$\frac{7(2-4)^3-9\cdot3+9\cdot4}{2^2+7^4}$$

$\frac{7(2-4)^3-9\cdot3+9\cdot4}{2^2+7^4}=\square$

(Round to the nearest thousandth.)

13. Determine the degree of each term of the polynomial, the leading term, the leading coefficient and the degree of the polynomial.

$-3x^3+7x^2+4x+3$

The degree of the first term is $\square$.

The degree of the second term is $\square$.

The degree of the third term is $\square$.

The degree of the fourth term is $\square$.

The leading term is $\square$.

The leading coefficient is $\square$.

The degree of the polynomial is $\square$.

14. Perform the operations indicated.

$(5x^2-3x-x^3+4)-(2x^2-9x-x^3+5)$

$(5x^2-3x-x^3+4)-(2x^2-9x-x^3+5)=\square$
(Simplify your answer.)

15. Multiply.

$(y^2-6)(8y^2-9y+8)$

$(y^2-6)(8y^2-9y+8)=\square$
(Simplify your answer.)

16. Multiply.

$(x+6)(x-2)$

$(x+6)(x-2)=\square$
(Simplify your answer.)

17. Square the binomial.

$(8x-7)^2$

$(8x-7)^2=\square$
(Simplify your answer.)

18. Find the product.

$(5r+5)(5r-5)$

$(5r+5)(5r-5)=\square$
(Simplify your answer.)

19. Factor.
$a^3-3a^2+4a-12$

$a^3-3a^2+4a-12=$

○A. $(a-3)(a^2+4)$

○B. $a(a^2-3a+4)-12$

○C. $a^2(a-3)+4(a-3)$

○D. $a^2+4(a-3)$

20. Factor the trinomial.

$t^2 + 5t + 6$

Select the correct choice below and, if necessary, fill in the answer box within your choice.

○A. The answer is ▪. (Factor completely.)

○B. The trinomial is not factorable.

21. Factor.

$3b^2 + 16b + 5$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

○A. $3b^2 + 16b + 5 =$ ▪

○B. The trinomial is not factorable.

22. Factor completely.

$81s^2 - 49$

Select the correct choice below and, if necessary, fill in the answer box within your choice.

○A. The answer is ▪. (Factor completely.)

○B. The binomial is not factorable.

23. Factor.

$c^3 + 27$

Select the correct choice below and, if necessary, fill in the answer box within your choice.

○A. The answer is ▪.
(Type your answer in factored form. Simplify your answer.)

○B. The binomial is not factorable.

24. Factor the trinomial.

$6b^2 - 11b - 10$

$6b^2 - 11b - 10 = \square$

25. Factor.

$s^2 - 12s + 36$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

○A. $s^2 - 12s + 36 =$ ▩ (Factor completely.)

○B. The polynomial is prime.