

*** Copy the problems, show all work, and write all answers on notebook paper. ***

EXPONENTS:

Write each product using an exponent.

1. $5 \times 5 \times 5 \times 5 \times 5 \times 5$ 5^6 2. $12 \times 12 \times 12$ 12^3 3. $9 \times 9 \times 9 \times 9$ 9^4 4. 7×7 7^2

Write each power as a product of the same factor. Then find the value. SHOW ALL STEPS!

5. 9^4 $9 \times 9 \times 9 \times 9$ (6561) 6. 2^5 $2 \cdot 2 \cdot 2 \cdot 2 \cdot 2$ (32) 7. 4^0 (1) 8. 6^1 (6) 9. 0.5^3 0.125

ORDER OF OPERATIONS:

Find the value of each expression. SHOW ALL STEPS!

10. $22 - 17 + 8$ (13) 11. $6 \times (9 + 2) - 5$ (61) 12. $55 \div (5 + 6) + 7 \times (2 + 14)$ (117)
 13. $26 + 6^2 \div 4$ (35) 14. $12 \div 4 + (5^2 - 6)$ (22) 15. $(8 - 6)^4 + 10 \times 9$ (106)

ALGEBRAIC EXPRESSIONS:

Evaluate each expression for the given values of the variables. SHOW ALL STEPS!

16. $24 \div a$ if $a = 6$ $24 \div 6$ (4) 17. $2b - 10$ if $b = 13$ (16) 18. $c^2 + c$ if $c = 8$ (72) 19. $5d^3$ if $d = 4$ (320)

Evaluate each expression if $w = 6$, $x = 8$, and $y = 12$. SHOW ALL STEPS!

20. $2w + 4x$ (44) 21. $3y^2 + 5w$ (462) 22. $y \div 3 + wx$ (52)

Define a variable. Then write each phrase as an algebraic expression.

23. 3 miles less than Ray $R - 3$
 24. renting a video game and paying a \$2 late fee $V + 2$
 25. the length of a painting that is 4 times the width $L = 4 \cdot w$
 26. buying 5 books and a \$2.50 magazine $5b + 2.50$
 27. half as much money as her brother spent $m \div 2$
 28. 8 more than 2 times her daughter's age $2a + 8$

Order of Operations

Use PEMDAS to evaluate the following expressions.

29. $(11 - 7) \times 3 - 2^3 + 5$
 P ✓ $4 \times 3 - 2^3 + 5$
 E ✓ $4 \times 3 - 8 + 5$
 MD ✓ $12 - 8 + 5$
 AS ✓ $4 + 5$
 (9)

30. $(17 + 3) \div 10 \times 5^2$
 P ✓ $20 \div 10 \times 5^2$
 E ✓ $20 \div 10 \times 25$
 MD ✓ 2×25
 AS ✓ (50)

31. $6^2 - 7 \times 4$ (9)
 P ✓ $36 - 7 \times 4$
 E ✓ $36 - 28$
 MD ✓ (8)
 AS ✓

32. $12 + 3^3 - 30$
 P ✓ $12 + 27 - 30$
 E ✓ $39 - 30$
 MD ✓ (9)
 AS ✓

Evaluate each expression using the value of the given variable.
 Show all work in the space provided under each problem.

1. $a^2 \div 3$ $a = 9$

P ✓
 E ✓
 MD ✓
 AS ✓

$$\begin{array}{r} 9^2 \div 3 \\ \hline 81 \div 3 \\ \hline (27) \end{array}$$

2. $f \div 3 + f$ $f = 6$

P ✓
 E ✓
 MD ✓
 AS ✓

$$\begin{array}{r} 6 \div 3 + 6 \\ \hline 2 + 6 \\ \hline (8) \end{array}$$

3. $4m^3 \cdot 5y$ $m = 2$ $y = 7$

P ✓
 E ✓
 MD ✓
 AS ✓

$$\begin{array}{r} 4 \cdot 2^3 \cdot 5 \cdot 7 \\ \hline 4 \cdot 8 \cdot 5 \cdot 7 \\ \hline 32 \cdot 5 \cdot 7 \\ \hline 160 \cdot 7 \\ \hline (1120) \end{array}$$

4. $90 - t^2 + t \cdot 4$ $t = 5$

P ✓
 E ✓
 MD ✓
 AS ✓

$$\begin{array}{r} 90 - 5^2 + 5 \cdot 4 \\ \hline 90 - 25 + 5 \cdot 4 \\ \hline 90 - 25 + 20 \\ \hline 65 + 20 \\ \hline (85) \end{array}$$

5. $19 + 6p \div 2$ $p = 9$

P ✓
 E ✓
 MD ✓
 AS ✓

$$\begin{array}{r} 19 + 6 \cdot 9 \div 2 \\ \hline 19 + 54 \div 2 \\ \hline 19 + 27 \\ \hline (46) \end{array}$$

6. $5k + k^2 + k \div 2$ $k = 4$

P ✓
 E ✓
 MD ✓
 AS ✓

$$\begin{array}{r} 5 \cdot 4 + 4^2 + 4 \div 2 \\ \hline 5 \cdot 4 + 16 + 4 \div 2 \\ \hline 20 + 16 + 4 \div 2 \\ \hline 20 + 16 + 2 \\ \hline 36 + 2 \\ \hline (38) \end{array}$$

Skills Practice

Integers and Absolute Value

Write an integer for each situation.

1. a \$5 discount

- \$5

2. a growth of 2.5 centimeters

+ 2.5

3. rise of 1,000 feet

+ 1000

4. loss of 6 pounds

- 6

5. price drop of \$12

- \$12

6. pay raise of \$1 per hour

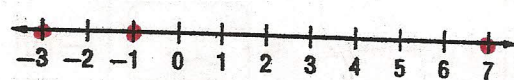
+ \$1

Graph each set of integers on a number line.

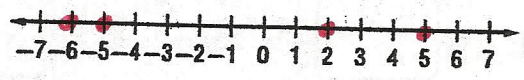
7. $\{-2, 0, 4\}$



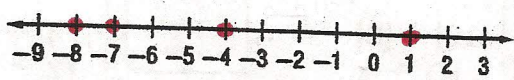
8. $\{7, -3, -1\}$



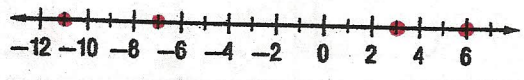
9. $\{5, -5, -6, 2\}$



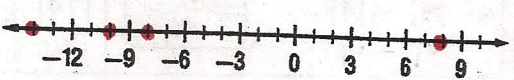
10. $\{-8, -7, -4, 1\}$



11. $\{-11, -7, 3, 6\}$



12. $\{-10, -8, -14, 8\}$



Evaluate each expression.

13. $|-4|$

4

14. $|800|$

800

15. $|10 - 5|$

$|5| = 5$

16. $|-18| - |13|$

$18 - 13 = 5$

17. $|16| - |-2|$

$16 - 2 = 14$

18. $|-11| + |0|$

$11 + 0 = 11$

19. $|-26| + |-17|$

$26 + 17 = 43$

20. $|-1| + |-1|$

$1 + 1 = 2$

* "How far am I away from 0?"

Name: _____

Score: _____

Absolute Value

Find the value:

1) $\begin{array}{r} -7 - 3 \\ 7 - 3 \end{array} = \boxed{4}$	2) $\begin{array}{r} 12 + 8 \\ 12 + 8 \end{array} = \boxed{20}$	3) $\begin{array}{r} 13 - -7 \\ 13 - 7 \end{array} = \boxed{6}$
4) $\begin{array}{r} -14 + -4 \\ 14 + 4 \end{array} = \boxed{18}$	5) $\begin{array}{r} -9 + 7 \\ 9 + 7 \end{array} = \boxed{16}$	6) $ 6 - 1 = \boxed{5}$ $6 - 1$
7) $\begin{array}{r} 11 + -12 \\ 11 + 12 \end{array} = \boxed{23}$	8) $\begin{array}{r} -10 - -2 \\ 10 - 2 \end{array} = \boxed{8}$	9) $\begin{array}{r} -13 + 4 \\ 13 + 4 \end{array} = \boxed{17}$
10) $\begin{array}{r} 10 + 8 \\ 10 + 8 \end{array} = \boxed{18}$	11) $\begin{array}{r} 12 - -7 \\ 12 - 7 \end{array} = \boxed{5}$	12) $\begin{array}{r} -15 + -4 \\ 15 + 4 \end{array} = \boxed{19}$
13) $\begin{array}{r} 9 - 4 \\ 9 - 4 \end{array} = \boxed{5}$	14) $\begin{array}{r} 14 + 3 \\ 14 + 3 \end{array} = \boxed{17}$	15) $\begin{array}{r} 10 - -6 \\ 10 - 6 \end{array} = \boxed{4}$
16) $\begin{array}{r} -11 + -3 \\ 11 + 3 \end{array} = \boxed{14}$	17) $\begin{array}{r} -15 - 7 \\ 15 - 7 \end{array} = \boxed{8}$	18) $\begin{array}{r} 9 - 2 \\ 9 - 2 \end{array} = \boxed{7}$
19) $\begin{array}{r} 14 + -5 \\ 14 + 5 \end{array} = \boxed{19}$	20) $\begin{array}{r} -11 - -6 \\ 11 - 6 \end{array} = \boxed{5}$	21) $\begin{array}{r} -5 + 4 \\ 5 + 4 \end{array} = \boxed{9}$
22) $\begin{array}{r} 12 - 8 \\ 12 - 8 \end{array} = \boxed{4}$	23) $\begin{array}{r} 7 - -1 \\ 7 - 1 \end{array} = \boxed{6}$	24) $\begin{array}{r} -10 + -5 \\ 10 + 5 \end{array} = \boxed{15}$

Determine which choice best answers the question.

- C 1)** Which choice shows the values from greatest to least?
- A. 5, 3, -4, 2
C. 5, 3, 2, -4
 D. 3, 2, 5, -4

- D 2)** Which choice shows the values from least to greatest?
- A. 9, 6, -5, 4
 B. 6, 4, 9, -5
 C. 9, -5, 6, 4
D. -5, 4, 6, 9

- C 3)** Which choice shows the values from greatest to least?
- A. -56, -74, -50, -68
 B. -74, -68, -56, -50
C. -50, -56, -68, -74
 D. -68, -74, -50, -56

- C 4)** Which choice shows the values from greatest to least?
- A. -64, -72, -60, -80
 B. -80, -72, -64, -60
C. -60, -64, -72, -80
 D. -80, -72, -60, -64

Answers

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

9-3 The Coordinate Plane

Use the coordinate plane to answer questions 1-12.

Name the quadrant where each point is located.

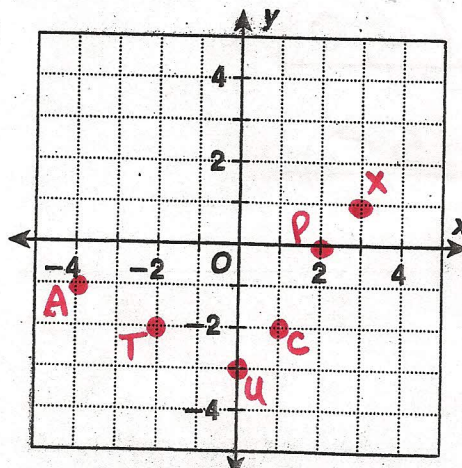
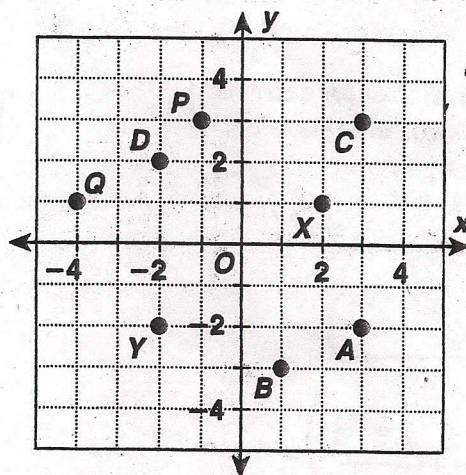
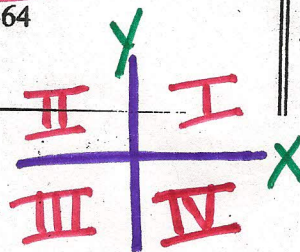
- | | |
|-----------------|----------------|
| 1. D <u>II</u> | 2. P <u>II</u> |
| 3. Y <u>III</u> | 4. B <u>IV</u> |
| 5. C <u>I</u> | 6. X <u>I</u> |

Give the coordinates of each point.

- | | |
|-----------------------|----------------------|
| 7. X <u>(2, 1)</u> | 8. A <u>(3, -2)</u> |
| 9. P <u>(-1, 3)</u> | 10. Q <u>(-4, 1)</u> |
| 11. Y <u>(-2, -2)</u> | 12. D <u>(-2, 2)</u> |

Graph each point on the coordinate plane at right.

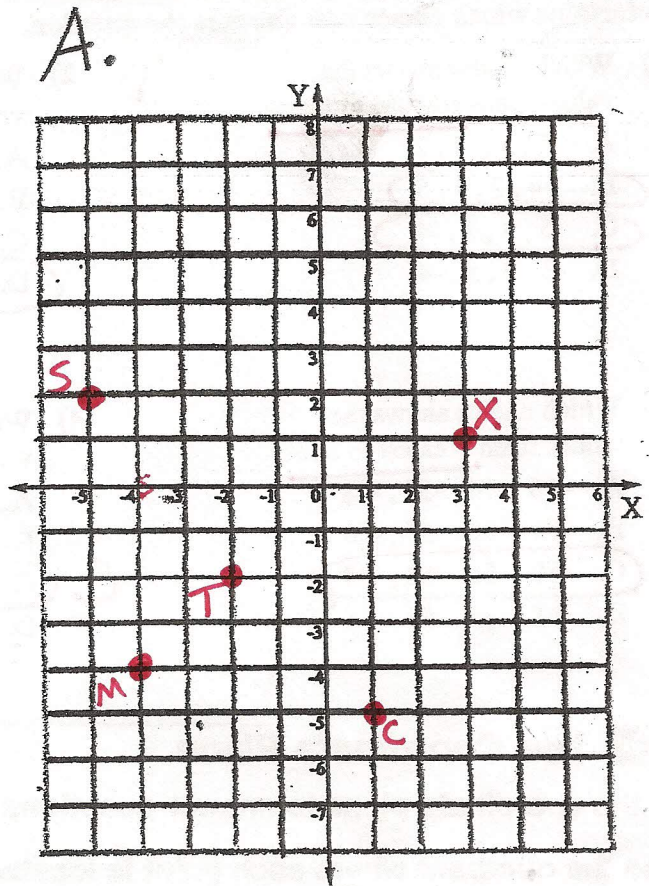
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|---------------|----------------|
| 13. X (3, 1) | 14. T (-2, -2) |
| 15. C (1, -2) | 16. U (0, -3) |
| 17. P (2, 0) | 18. A (-4, -1) |



Graph the following ordered pairs on the Coordinate Plane A.

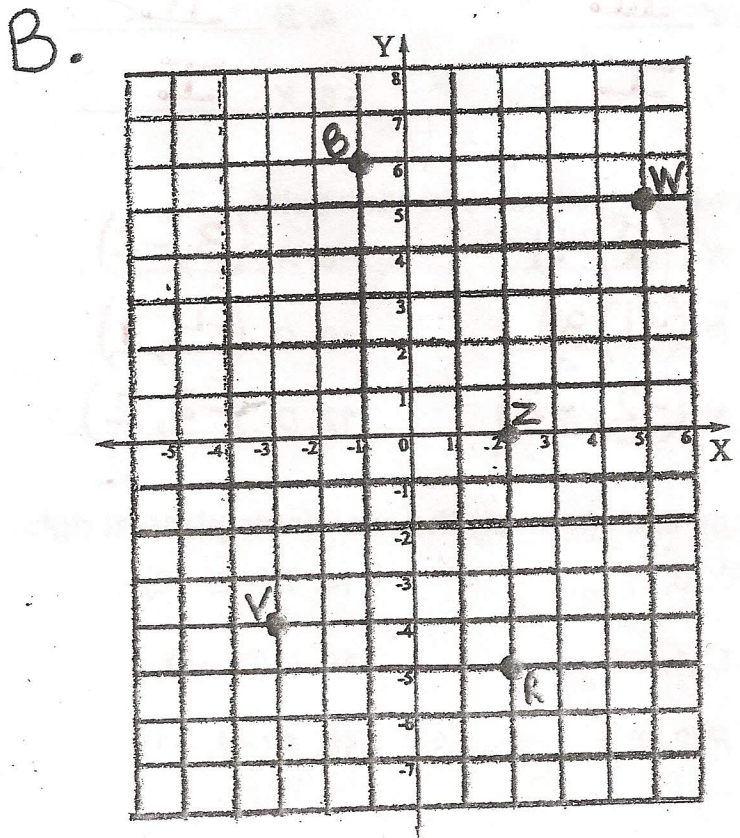
Coordinate Plane A

1. X (3, 1)
2. T (-2, -2)
3. C (1, -5)
4. M (-4, -4)
5. S (-5, 2)



Identify the ordered pair for each point indicated on Coordinate Plane B.

1. B (-1, 6)
2. R (2, -5)
3. V (-3, -4)
4. Z (2, 0)
5. W (5, 5)



* Memorize your word phrase chart !! ←

Name: _____ * Especially switch phrases!
Math Period: _____

Wkst: Q2-13A

yellow chart

I can translate a real-world situation into an algebraic expression or equation.

Express each phrase as an algebraic expression.

1. take away 40 from a number b $b - 40$	2. difference of 16 and a number k $16 - k$
3. add a number y to 12 $y + 12$	4. 30 plus a number c $30 + c$
5. 34 less than a number n switch phrase $n - 34$	6. 15 divided into a number j $\frac{j}{15}$
7. 22 multiplied by a number e $22 \cdot e$ or $22e$	8. 20 increased by a number q $20 + q$
9. product of a number m and 33 $m \times 33$ or $33m$	10. 37 more than a number a $37 + a$ or $a + 37$
11. sum of a number t and 43 $t + 43$	12. a number v decreased by 47 $v - 47$
13. a number h times 36 $h \times 36$ or $36h$	14. a number p divided by 24 $\frac{p}{24}$
15. subtract a number w from 9 $9 - w$	16. 21 less a number x $21 - x$
17. 7 minus a number r $7 - r$	18. quotient of a number d and 32 $\frac{d}{32}$
19. product of 5 and a number u $5 \cdot u$ or $5u$	20. a number f times 41 $f \cdot 41$ or $41f$
21. a number z decreased by 11 $z - 11$	22. sum of a number s and 46 $s + 46$
23. take away 6 from a number g $g - 6$	24. difference of 2 and a number y $2 - y$
25. 19 divided by a number b $\frac{19}{b}$	26. 26 plus a number n $26 + n$
27. a number s less 45 $s - 45$	28. quotient of 35 and a number a $\frac{35}{a}$
29. subtract a number m from 13 $13 - m$	30. a number u increased by 17 $u + 17$

p12

Write an algebraic expression for each phrase given.

1 20 decreased by 17 $20 - 17$

2 twice 6 $2 \cdot 6$

3 the product of 4 and 5 $4 \cdot 5$

4 10 increased by 8 $10 + 8$

5 10 less than 17 $17 - 10$

6 the quotient of 96 and 8 $\frac{96}{8}$

7 half of 14 $\frac{1}{2} \cdot 14$

8 the difference of 10 and 5 $10 - 5$

9 Sam ate 5 more pickles than Robert $m + 5$

10 The temperature is 5 degrees greater than yesterday. $m + 5^\circ$

11 Howard has 30 baseball cards to distribute equally among his friends. $30 \div m$

12 Auburn won 5 times as many games as Alabama.

13 Katie completed 6 less problems than Amy completed. $5m$

14 George is 9 years less than two times Eric's age. $A - 6$

15 One-third of the class earned an A. $2m - 9$

$\frac{1}{3} \cdot m \cong \frac{1}{3}m$