Order of Operations Agreement

1) **Parenthesis ( ) or [ ] or { } or —**
   (Do operations inside grouping symbols AND above or below a division bar)
   (Do innermost grouping symbols first.)

2) **Exponents** $3^2 = 3 \cdot 3 = 9$

3) **Multiply and Divide from left to right**

4) **Add or Subtract from left to right**

Accelerated Math
Numbers and Expressions
(Section 1-2)

Find the value of this numerical expression.

$5 + 5 \cdot 5 - 5 \div 5 + 5 \cdot 5 \div 5$

$5 + 25 - 5 \div 5 + 5 \cdot 5 \div 5$

$5 + 25 - 1 + 5 \cdot 5 \div 5$

$5 + 25 - 1 + 25 \div 5$

$5 + 25 - 1 + 5$

$30 - 1 + 5$

$29 + 5$

34

Show work like this:

$28 \div (3-1)^2$ $28 \div (2)^2$ $28 \div 4$ 7	$12(3) - 2^2$ $12(3) - 4$ $36 - 4$ 32
$15 + 5(3) - 2$ $15 + 15 - 2$ $30 - 2$ 28	$80 - 4^3 + 100 + 5(15-10)$ $80 - 4^3 + 100 + 5(5)$ $80 - 64 + 100 + 5(5)$ $80 - 64 + 100 + 25$ $16 + 100 + 25$ 141

Beware

Note the differences!

$48 \div 8 \cdot 3$ $6 \cdot 3$ 18	**$48 \div (8 \cdot 3)$** $48 \div 24$ 2
$2 \cdot 8^2$ $2 \cdot 64$ 128	**$(2 \cdot 8)^2$** $(16)^2$ 256
$8 + 2^3$ $8 + 8$ 16	**$(8+2)^3$** 10^3 1000

$10 \cdot 10 \cdot 10$

Evaluate. Show steps.

$$\frac{4 + 6 \times 2}{3^2 - 2 - 3}$$

$$\frac{4+12}{9-2-3}$$

$$\frac{16}{7-3}$$

$$\frac{16}{4}$$

4

$8 + 2[18 \div (3 + 6) + 2^3]$

$8+2[18 \div 9 + 2^3]$

$8+2[18 \div 9 + 8]$

$8+2[2+8]$

$8+2[10]$

$8+20$

28

$2 \cdot 2 \cdot 2$

$8+2 \cdot 10$

What characteristic determines on which side of the T-chart a number belongs?

Characteristic: perfect squares

	IS	IS NOT
16	25	144
64	81	1
49	9	400
36	100	
		7 2
		46
		18

$\square^2$

perfect squares

1, 4, 9, 16, 25, 36, 49, 64, 81, 100, 121, 144, ⋮

perfect cube

1, 8, 27, 64, 125, 216, 343, ⋮

$2^3 = 2 \cdot 2 \cdot 2$

$3^3 = 3 \cdot 3 \cdot 3 = 27$

4^3

5^3

6^3

7^3

$49 \times 7 = 343$

Find the errors! AND Correct work!

$(2)3^2 + 12 \div 4 \times 3$

$(2)9 + 12 \div 4 \times 3$

~~$6^2 + 12 \div 4 \times 3$~~

$18 + 12 \div 4 \times 3$

~~$36 \div 12 \cdot 12$~~

$18 + 3 \times 3$

~~$36 \cdot 1$~~

$18 + 9$

~~37~~

27

$2 + 8(5 - 2)^2$

$2 + 8(3)^2$

~~$10(5 - 2)^2$~~

$2 + 8(9)$

~~$10(3)^2$~~

$2 + 72$

~~$10(9)$~~

74

~~90~~