

tues ch 1+2  
 wed ch 3+4  
 thurs ch 5+6  
 Fri Review + test 1-6

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1-1 order of operations  
 expression  
 bunch of operations to do

$4+7$  (expression)  
 $11$  (value)

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$4+7*6$   
 $4+42$   
 $46$

mult  
 +  
 div  
 are first

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$4+7*6\div 2$   
 $4+42\div 2$   
 $4+21$   
 $25$

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$8+3(2-1)$   
 $8+3(1)$  implied multiplication  
 $8+3$   
 $11$

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#36)  $7.5 - (18\div 6)4 + 2(7-4)\div 2$   
~~3~~  $35 - (3)4 + 2(3)\div 2$   
 $35 - 12 + 6\div 2$   
 $* 35 - 12 + 3$   $\leftarrow$  left to right!!  
 $23 + 3$   
 $26$   
 $35 + (-12) + 3$

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order of operations  
for evaluating expressions

- 1- parentheses
- 2- mult + div (left to right)
- 3- add + sub (left to right)

"pemdas"

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1-2 expressions with variables

expression ✓

variable: symbol that represents some value

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$6 + 3x$   
value of expression ?

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$6 + 3x$   
value of expression ?

let  $x = 4$

$6 + 3x$   
 $6 + 3(4)$   
 $6 + 12$   
 $18$

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pg 6 #41)  $x=4$   $y=6$   $z=5$

$\frac{2xy + 5z - 1}{x + y - z}$

$\frac{2(4)(6) + 5(5) - 1}{4 + 6 - 5}$

$\frac{48 + 25 - 1}{5}$

$\frac{72}{5}$

~~$\frac{147}{5}$~~

$14.4$

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1.3 - commutative and associative properties

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commutative property of addition

$$a+b = b+a$$

$$7+3 = 10$$

$$3+7 = 10$$

$$6-2 = 4$$

$$6+(-2)$$

$$-2+6 = 4$$

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commutative property of multiplication

$$a*b = b*a$$

$$6*2 = 12$$

$$2*6 = 12$$

$$6*(-2) = -12$$

$$(-2)*6 = -12$$

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associative property of addition

$$(a+b)+c = a+(b+c)$$

|           |           |
|-----------|-----------|
| $(7+6)+3$ | $7+(6+3)$ |
| $13+3$    | $7+9$     |
| $16$      | $16$      |

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associative property of multiplication

$$(a*b)*c = a*(b*c)$$

|           |           |
|-----------|-----------|
| $(7*6)*2$ | $7*(6*2)$ |
| $42*2$    | $7*12$    |
| $84$      | $84$      |

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1.4 distributive property (of multiplication over addition)

$$a(b+c) = ab+ac$$

|          |             |
|----------|-------------|
| $7(3+2)$ | $7(3)+7(2)$ |
| $7(5)$   | $21+14$     |
| $35$     | $35$        |

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$7(x+3)$

simplify using the distributive property:

$$7x + 7(3)$$

$$7x + 21$$

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pg 12 #25)

$$3(3a+4)$$

$$9a+12$$

#27)  $(14g+7)\frac{1}{7}$

$$\frac{14g \cdot \frac{1}{7} + 7 \cdot \frac{1}{7}}{\frac{14g}{7} + \frac{7}{7}}$$

$2g+1$

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1-5 combining like terms

like terms: same variables with same exponents

$$3x + 2x$$

simplify the expression.

$$5x$$

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$$\frac{3x+2y}{3x+3x^2}$$

$$3(6)+3(6^2)$$

$$3(6)+3(6 \cdot 6)$$

$$18 + 108$$

$$126$$

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when simplifying expressions  
You - combine like terms

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1-6 factors and exponents

$$3^2 = 3 \cdot 3 = 9$$

$$3^5 = 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 = 243$$

$$7^2 = 7 \cdot 7 = 49 \text{ (not } 7 \cdot 2 = 14 \text{ !!)}$$

$$\begin{matrix} 3^2 \cdot 2 + 6 \\ 9 \cdot 2 + 6 \\ 18 + 6 \end{matrix} \rightarrow 24$$

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factors + terms

terms:  $3x+6$  (added)      2 terms:  $3x$   
 $6$

factors:  $3x$  (multiplied)      2 factors:  $3$   
 $x$



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$12x^3$   
 $3 \cdot 4 \cdot x \cdot x \cdot x$   
 $3 \cdot 2 \cdot 2 \cdot x \cdot x \cdot x$     Factors

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1-8 - solutions to open sentences  
 open sentence  $\rightarrow$  equation  
 $7x+4=25$   
 "↑  
 here"  
 Solution: value of  $x$  that gives a true statement.

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$7x+4=25$   
 $x=3$                        $x=5$   
 $7(3)+4=25$                $7(5)+4 \neq 25$   
 $21+4=25$                  $35+4 \neq 25$   
 $25=25 \checkmark$                  $39 \neq 25$   
                      

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ch 1: p 24:  
 3,9,11,13,21,25,33,35,37  
 Ch 2: p 60:  
 7,9,11,15,17,21,23,27,29,33,35,37,  
 39,43,45

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