

## Warm-Up

## BEDMAS

NO CALCULATOR

a.  $(4+3^2) \times 5 - 2$

$$(4+9) \times 5 - 2$$

$$13 \times 5 - 2$$

$$65 - 2$$

$$\textcircled{63}$$

b. 
$$\frac{17 - 5 \times 2 (4^2 + 6)}{4^2 - 3^2}$$

$$\frac{17 - 5 \times 2 (16 + 6)}{16 - 9}$$

$$\frac{17 - 5 \times 2 \times 22}{7}$$

$$\frac{17 - 10 \times 22}{7}$$

$$\frac{17 - 220}{7}$$

$$\frac{-203}{7}$$

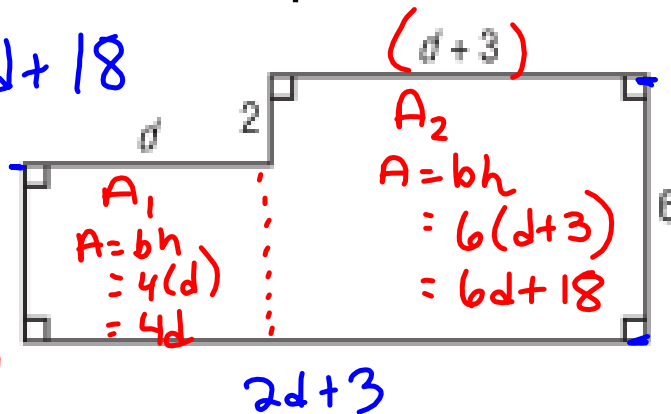
Find the polynomial that represents

A) perimeter  $4d + 18$

B) Area

$$4d + 6d + 18 \quad 4$$

$$10d + 18$$



Solve for the perimeter and area if  $d=2$

$$1) P = 4d + 18$$

$$\begin{aligned} &4(2) + 18 \\ &8 + 18 \\ &26 \end{aligned}$$

$$2) A = 10d + 18$$

$$\begin{aligned} &= 10(2) + 18 \\ &20 + 18 \\ &38 \end{aligned}$$

# **Unit 2**

## **Exam Review**

### **Powers and Exponents**

## Powers

$$3^4$$

Base 3

Exponent 4

Repeated multiplication  $3 \times 3 \times 3 \times 3$

Evaluate 81

# Evaluate

a.  $(-2)^3$  ← odd  
 $-2 \times -2 \times -2$

$-8$

B.  $-(2)^4$

$-16$

C.  $-(-3)^4$  ← even  
 $-(4)$

$-81$

D.  $-3^3$

$-27$

$-(3)^3$

E.  $-(-3)^3$  ← odd

$-(-) 27$

Zero Exponent **Any base with a zero exponent equals 1**

$$(2)^0$$

1

$$(-2)^0$$

1

$$-(2)^0$$

-1

$$-(-2)^0$$

-1

# Order of Operations

## BEDMAS

$$8 \times 5^2 + 2^3 - (5^3 - 3^2)$$

$$8 \times 25 + 8 - (125 - 9)$$

$$8 \times 25 + 8 - 116$$

$$200 + 8 - 116$$

$$\textcircled{92}$$

Evaluate

 $-1 \times -1 \times -1$ 

A.  $[2 \times (-1)^3 - 6]^2$

$$(2 \times -1 - 6)^2$$

$$(-2 - 6)$$

$$(-8)^2$$

$$(64)$$

 ~~$-8^2$~~ 

B.  $(-3)^2 - 2 + (-3)^4 - 1^5 + 1^0$

$$9 - 2 + 81 - 1 + 1$$

$$7 + 81 - 1 + 1$$

$$88 - 1 + 1$$

$$88$$



Evaluate

$$10^3 = 1000$$

← Gives # of zeros when base "10"

$$10^6 = 1\,000\,000$$

$$10^0 = 1$$

$$10^1 = 10$$

Write using power of 10.

a) 37 241

Expanded form  $30\,000 + 7\,000 + 200 + 40 + 1$

form  $3 \times 10^4 + 7 \times 10^3 + 2 \times 10^2 + 4 \times 10^1 + 1 \times 10^0$

# EXPONENT RULES!

## EXPONENT LAW 1

Powers with the same base being multiplied

**ADD THE EXPONENTS!!!**

		<i>Use exponent laws</i>	<i>Answer</i>
a)	$5^2 \times 5^3 =$	<b>Simplify</b> $5^{2+3} = 5^5$	<b>Evaluate</b> 3125
b)	$(-2)^6 \times (-2)^3 =$	$(-2)^{6+3} = (-2)^9$	-512

Powers with the same base being divided

**SUBTRACT THE EXPONENTS!!!**

		<i>Simplify</i>	<i>Evaluate</i>
a)	$8^9 \div 8^5 =$	$8^4$	4096
b)	$\frac{(-6)^{10}}{(-6)^4}$	$(-6)^6$	46 656

## EXPONENT LAW 2

WHEN A POWER IS RAISED TO AN EXPONENT

MULTIPLY THE EXPONENTS!!!

Simplify

$$\begin{array}{l} (3^4)^2 \\ \times \\ 3^8 \end{array} = (3)^8$$

1)  $3^2 \times 3^2$   
 $3^4$

**SIMPLIFY**

↓  
Use exponent  
laws

2)  $(-5)^2 \times (-5)^4$

$(-5)^6$

3.  $\frac{5^8}{5^2}$   
 $5^6$

4.  $\frac{(-2)^3}{(-2)^0}$   
 $(-2)^3$

5.  $(4^8)^3$   
 $4^{24}$

## SIMPLIFY THEN EVALUATE!!!

$$\frac{3^6 \times 3^7}{3^8} + (2^3 \times 2)^2 - (-1)^0$$

$$\frac{3^{13}}{3^8} + (2^3)^2 - (-1)^0$$

$$3^5 + 2^6 - (-1)^0$$

1-17  
Show work  
When you  
can

18-28  
Short answers  
Show work

~ 35min