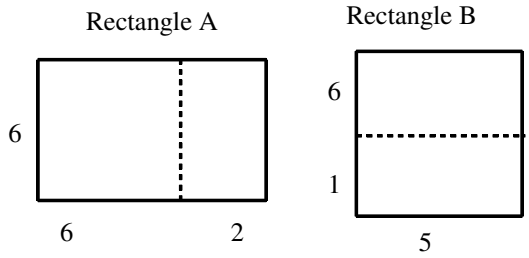
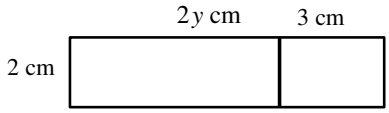
Chapter 9 Practice Test #2

1. Each of the following expressions describes the area of one of the rectangles below. Write the letter of the rectangle for each expression.
   a. $6*(6+2)$
   b. $(6+1)*5$
   c. $30+5$
   d. $(6*6)+(2*6)$



2. The area of the rectangle is 30 cm^2.



   a. Write a number sentence that you can use to find the value of *y*.
   b. Solve for *y*. Show your work.

Solve each equation.

3. $40=8(x+6)$

4. $3x-2=x-8$

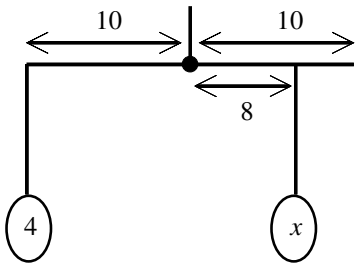
The formula for converting Celsius temperatures to Fahrenheit is $F=(1.8*C)+32$.

5. If $C=-10,$ what is F?

The formula for converting Celsius temperatures to Fahrenheit is $F = (1.8 * C) + 32$.

6. If $F = 14$, what is C?

7. The mobile is in balance. The fulcrum of the mobile given below is the center point of the rod. What is the weight of the object to the right of the fulcrum? Use the formula $(W * D) = (w * d)$.

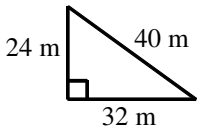


8. Use the formulas to solve the problem below.

Area	Volume
$A = b * h(\text{rectangle, parallelogram})$ $A = \pi * r^2(\text{circle})$ $A = \frac{1}{2} * b * h(\text{triangle})$	$V = B * h, \text{or } l * w * h(\text{rectangular prism})$ $V = B * h, \text{or } \pi * r^2 * h(\text{cylinder})$ $V = \frac{4}{3} * \pi * r^2(\text{sphere})$
Circumference $C = 2 * \pi * r$	PythagoreanTheorem $a^2 + b^2 = c^2$

a. Record the formula used.

b. Find the area of the given triangle.

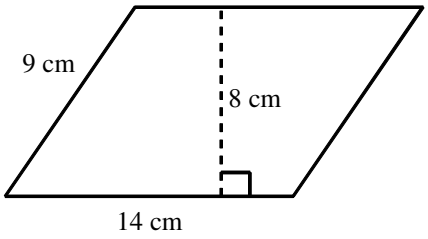


9. Use the formulas to solve the problem below.

Area	Volume
$A = b * h(\text{rectangle, parallelogram})$ $A = \pi * r^2(\text{circle})$ $A = \frac{1}{2} * b * h(\text{triangle})$	$V = B * h, \text{or } l * w * h(\text{rectangular prism})$ $V = B * h, \text{or } \pi * r^2 * h(\text{cylinder})$ $V = \frac{4}{3} * \pi * r^2(\text{sphere})$
Circumference $C = 2 * \pi * r$	PythagoreanTheorem $a^2 + b^2 = c^2$

a. Record the formula used.

b. Find the area of the given parallelogram.

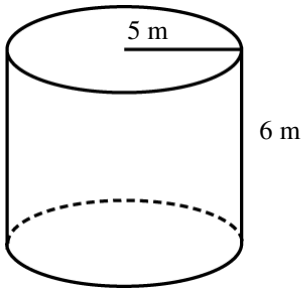


10. Use the formulas to solve the problem below. Use $\pi = 3.14$.

Area	Volume
$A = b * h(\text{rectangle, parallelogram})$ $A = \pi * r^2(\text{circle})$ $A = \frac{1}{2} * b * h(\text{triangle})$	$V = B * h, \text{or } l * w * h(\text{rectangular prism})$ $V = B * h, \text{or } \pi * r^2 * h(\text{cylinder})$ $V = \frac{4}{3} * \pi * r^2(\text{sphere})$
Circumference $C = 2 * \pi * r$	PythagoreanTheorem $a^2 + b^2 = c^2$

a. Record the formula used.

b. Find the volume of the given cylinder.

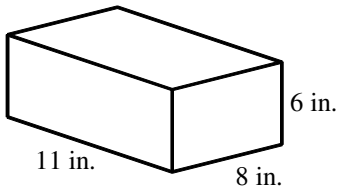


11. Use the formulas to solve the problem below.

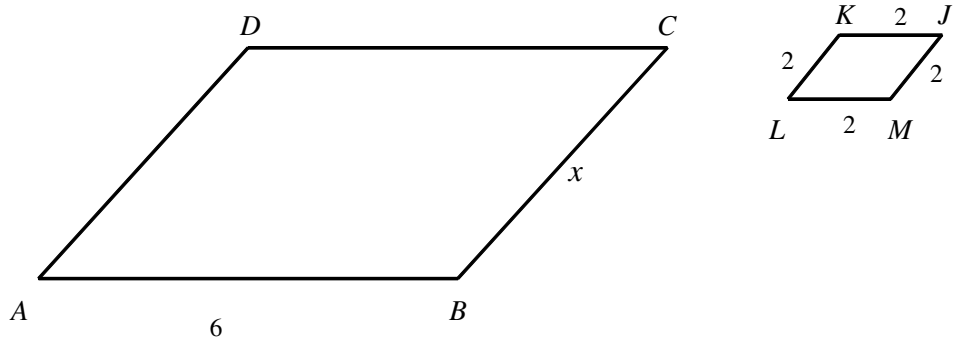
Area	Volume
$A = b * h(\text{rectangle, parallelogram})$ $A = \pi * r^2(\text{circle})$ $A = \frac{1}{2} * b * h(\text{triangle})$	$V = B * h, \text{or } l * w * h(\text{rectangular prism})$ $V = B * h, \text{or } \pi * r^2 * h(\text{cylinder})$ $V = \frac{4}{3} * \pi * r^2(\text{sphere})$
Circumference $C = 2 * \pi * r$	PythagoreanTheorem $a^2 + b^2 = c^2$

a. Record the formula used.

b. Find the volume of the given prism.



12. Figures *ABCD* and *LMJK* are similar. Figure *ABCD* is an enlargement of *LMJK*.



a. What is the size-change factor that describes the enlargement?

b. Find the length of side *x*.

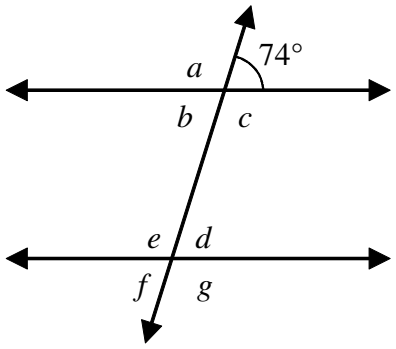
c. Calculate the perimeter of *LMJK*. Then explain how you can use the size-change factor to find the perimeter of *ABCD*.

13. Find an approximate solution to the equation $x^2 - 1 = 90$. Use trial and error. Record your result in the table.
A first guess is shown. Stop when you get within 1 of 90.

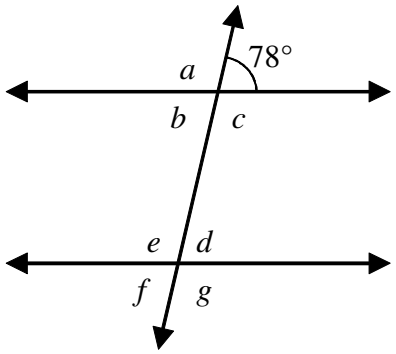
x	x^2	$x^2 - 1$	Compare $x^2 - 1$ to 90
9	81	80	$80 < 90$

14. The ratio of number-side up to number-side down cards is 2 to 8. If there are 50 cards altogether, how many cards are number-side up?

15. Without using a protractor, find the measure of each angle in the diagram below.



16. Without using a protractor, list all the angles in the diagram that measure 102°.



Solve. Follow the rules for the order of operations.

17. $15 + 30/5 * 9 =$ _____

18. $4 * 6 - 4^4 + 3 =$ _____

19. Write an equation that describes the relationship between the numbers in the table below.

x	***y***
0	2
2	$2\frac{1}{2}$
3	$2\frac{3}{4}$
4	3
6	$3\frac{1}{2}$

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a. A
b. B
c. B
[1] d. A

a. $(2y + 3) \times 2 = 30 \text{ cm}^2$
[2] b. 6; Work shown will vary.

[3] –1

[4] -3

[5] 14

[6] –10

[7] 5 units

a. $A = \frac{1}{2} * b * h$
[8] b. 384 m^2

a. $A = b * h$
[9] b. 112 cm^2

a. $V = B * h$ or $\pi * r^2 * h$
[10] b. 471m^3

a. $V = B * h$ or $l * w * h$
[11] b. 528 in.^3

a. 3

b. 6

c. 8; Sample explanation: I can multiply the perimeter of *LMJK* by the size-change factor of

[12] the enlargement.

[13]

x	x^2	x^2-1	Compare x^2-1 to 90
9	81	80	$80<90$
10	100	99	$99>90$
9.5	90.25	89.25	$89.25<90$

[14] 10 cards

[15] $m\angle a=106°,\ m\angle b=74°,\ m\angle c=106°,\ m\angle d=74°,\ m\angle e=106°,\ m\angle f=74°,$ $m\angle g=106°$

[16] $\angle a, \angle c, \angle e, \angle g$

[17] 69

[18] –229

[19] *Rule:* $y=\left(\frac{1}{4}\text{ of }x\right)+2$