

## 2.5 Formulas &amp; Problem Solving CYU DAY TWO

Use when you get it right all by yourself

**S** Use when you did it all by yourself, but made a silly mistake

**H** Use when you could do it alone with a little help from teacher or peer

**G** Use when you completed the problem in a group

**X** Use when a question was attempted but wrong (get help)

**N** Use when a question was not even attempted

CONCEPTS	BASIC	INTERMEDIATE	ADVANCED

1 – 14: Solve each formula for the specified variable. Literal equations are used in math and science!

1.  $f = 5gh$  for  $h$

$$h = \frac{f}{5g}$$

2.  $A = \pi ab$  for  $b$

$$b = \frac{A}{\pi a}$$

3.  $V = lwh$  for  $w$

$$w = \frac{V}{lh}$$

4.  $T = mnr$  for  $n$

$$n = \frac{T}{mr}$$

5.  $3x + y = 7$  for  $y$

$$y = 7 - 3x$$

6.  $-x + y = 13$  for  $y$

$$y = x + 13$$

7.  $A = P + PRT$  for  $R$

$$R = \frac{A - P}{PT}$$

8.  $A = P + PRT$  for  $T$

$$T = \frac{A - P}{PR}$$

9.  $V = \frac{1}{3}Ah$  for  $A$

$$A = \frac{3V}{h}$$

10.  $D = \frac{1}{4}fk$  for  $k$

$$k = \frac{4D}{f}$$

11.  $P = a + b + c$  for  $a$

$$a = P - b - c$$

12.  $PR = x + y + z + w$  for  $z$

$$z = PR - x - y - w$$

13.  $S = 2\pi rh + 2\pi r^2$  for  $h$

$$h = \frac{S - 2\pi r^2}{2\pi r}$$

14.  $S = 4lw + 2wh$  for  $h$

$$h = \frac{S - 4lw}{2w}$$

15 – 22: Solve the problem. Show your work to earn full credit. Use appropriate units.

15. The Hawaiian volcano Kilauea is one of the world's most active volcanoes and has had continuous eruptive activity since 1983. Erupting lava flows through a tube system about 11 kilometers to the sea. Assume a lava flow speed of 0.5 kilometer per hour and calculate how long it takes to reach the sea.

22hr

16. The world's largest pink ribbon, the sign of the fight against breast cancer, was erected out of pink Post-it notes on a billboard in New York City in October 2004. If the area of the rectangular billboard covered by the ribbon was approximately 3990 square feet, and the width of the billboard was approximately 57 feet, what was the height of this billboard?

70ft

17. The perimeter of an equilateral triangle is 7 inches more than the perimeter of a square, and the side of the triangle is 5 inches longer than the side of the square. Find the side of the triangle. (HINT: an equilateral triangle has three sides the same length.)

13 in

18. A square animal pen and a pen shaped like an equilateral triangle have equal perimeters. Find the length of the sides of each pen if the sides of the triangular pen are fifteen less than twice the sides of the square pen.

$\square : 22.5u$

$\triangle = 30u$

19. Find how long it takes a person to drive 135 miles on I-10 if she merges onto I-10 at 10 a.m. and drives nonstop with her cruise control set on 60 mph.

2.25 hr

20. Beaumont, Texas, is about 150 miles from Toledo Bend. If Leo Miller leaves Beaumont at 4 a.m. and averages 45 mph, when should he arrive at Toledo Bend?

7:20 a.m.

21. The longest runway at Los Angeles International Airport has the shape of a rectangle and an area of 1,813,500 square feet. This runway is 150 feet wide. How long is the runway?

12,090 ft

22. Normal room temperature is about 78° F. Convert this temperature to Celsius.

$25\frac{5}{9}^{\circ}\text{C}$

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CYU Reflection: How far can you go: basic, intermediate, or advanced?

Rate your mastery level!

How confident are you with the skills this CYU covered? Circle the score you would give yourself.

