Section 4-6: Transforming Formulas

1. 010310a, P.I. A.A.23
The equation $P = 2L + 2W$ is equivalent to

[A] $L = P - W$ [B] $L = \frac{P + 2W}{2}$

[C] $2L = \frac{P}{2W}$ [D] $L = \frac{P - 2W}{2}$

2. 010620a, P.I. A.A.23
In the equation $A = p + prt$, t is equivalent to

[A] $\frac{A - pr}{p}$ [B] $\frac{A}{pr} - p$

[C] $\frac{A - p}{pr}$ [D] $\frac{A}{P} - pr$

3. 060617a, P.I. A.A.23
The formula for the volume of a right circular cylinder is $V = \pi r^2 h$. The value of h can be expressed as

[A] $\frac{V}{\pi r^2}$ [B] $V - \pi r^2$

[C] $\frac{\pi r^2}{V}$ [D] $\frac{V}{\pi} r^2$

4. 010710a, P.I. A.A.23
The formula for potential energy is $P = mgh$, where P is potential energy, m is mass, g is gravity, and h is height. Which expression can be used to represent g?

[A] $P - mh$ [B] $P - m - h$

[C] $\frac{P}{mh}$ [D] $\frac{P}{m} - h$

5. 069922a, P.I. A.A.23
Shoe sizes and foot length are related by the formula $S = 3F - 24$, where S represents the shoe size and F represents the length of the foot, in inches.
a Solve the formula for F.
b To the *nearest tenth of an inch*, how long is the foot of a person who wears a size $10\frac{1}{2}$ shoe?

[1] D

[2] C

[3] A

[4] C

a [1] $\frac{S+24}{3}$ or $\frac{S}{3}+8$

b [1] 11.5

or [1] Correct substitution into an incorrect part a is shown, and the answer is given to the nearest tenth of an inch.

a and b

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously

[5] incorrect procedure.