1.4 ① Formulas

a) $A = \frac{1}{2}h(a+b)$

$2A = h(a+b)$

$\frac{2A}{h} = \frac{h(a+b)}{h}$

$2A = ah + bh$

$\frac{2A}{h} = a+b$

$\frac{2A - bh}{h} = \frac{ah}{h}$

$\frac{2A}{h} - \frac{bh}{h} = a$

$\frac{2A-bh}{h} = a$

$\frac{2A-bh}{h}$

$\frac{2A}{h} - \frac{bh}{h} = a$

b) $A = 2\pi r^2 + 2\pi r h$

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

$$\frac{6 - 2}{2} = 2$$

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

$$h = \frac{A}{2\pi r} - r$$

Applications

1. Geometry
2. Interest (simple) $I = P \cdot r \cdot t$
3. Uniform motion $d = r \cdot t$
4. Mixture
5. other

(2)

	rate • time = distance		
bus	60	31 − t	60(31 − t)
train	80	t	80t
		31	2300

$60(31-t) + 80t = 2300$

$1860 - 60t + 80t = 2300$

$1860 + 20t = 2300$

$-1860 \qquad -1860$

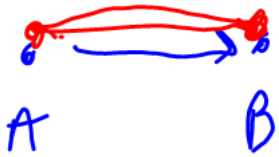
$20t = 440$

$t = 22$

time of train was 22 hrs

(3)

	rate	• time	= distance	
upstream	5-1 4	t+2	4(t+2)	same
downstream	5+1 6	t	6t	



$4(t+2) = 6t$

$4t + 8 = 6t$

$8 = 2t$

$4 = t$

$6 \cdot 4 =$ distance is 24 miles

mixture

12%	+	60%	=	X
8 pints		2 pints		10 pints

$.12(8) + .60(2) = 10x$

$0.96 + 1.20 = 10x$

$\frac{2.16}{10} = \frac{10x}{10}$

$.216 = x \rightarrow 21.6\%$