

25. E

26. A 27. F 28. B 29. D 30. C

1-4 PRACTICE

$$1) \begin{array}{r} 7.2 + c = 19 \\ -7.2 \quad -7.2 \\ \hline \end{array}$$

$$\boxed{c = 11.8}$$

$$2) \begin{array}{r} 8.5 = 5p \\ \frac{8.5}{5} = \frac{5p}{5} \end{array}$$

$$\boxed{p = 1.7}$$

$$3) \begin{array}{r} d = -31.4 \\ \frac{d}{4} = \frac{-31.4}{4} \end{array}$$

$$\boxed{d = -124}$$

$$4) \begin{array}{r} s - 31 = 20.6 \\ +31 \quad +31 \\ \hline \end{array}$$

$$\boxed{s = 51.6}$$

$$5) 9(z-3) = 12z$$

$$\begin{array}{r} 9z - 27 = 12z \\ -9z \quad -9z \\ \hline \end{array}$$

$$\begin{array}{r} -27 = 3z \\ \frac{-27}{3} = \frac{3z}{3} \end{array}$$

$$\boxed{-9 = z}$$

$$6) \begin{array}{r} 7y + 5 = 6y + 11 \\ -6y \quad -6y \\ \hline \end{array}$$

$$\begin{array}{r} y + 5 = 11 \\ -5 \quad -5 \\ \hline \end{array}$$

$$\boxed{y = 6}$$

$$7) 5w + 8 - 12w = 16 - 15w$$

$$\begin{array}{r} 8 - 7w = 16 - 15w \\ +15w \quad +15w \\ \hline \end{array}$$

$$\begin{array}{r} 8 + 8w = 16 \\ -8 \quad -8 \\ \hline \end{array}$$

$$\begin{array}{r} 8w = 8 \\ \frac{8w}{8} = \frac{8}{8} \end{array}$$

$$\boxed{w = 1}$$

$$8) 3(x+1) = 2(x+11)$$

$$\begin{array}{r} 3x + 3 = 2x + 22 \\ -2x \quad -2x \\ \hline \end{array}$$

$$\begin{array}{r} x + 3 = 22 \\ -3 \quad -3 \\ \hline \end{array}$$

$$\boxed{x = 19}$$

9)

BROTHER 1

x

BROTHER 2

x + 15

TOTAL

55

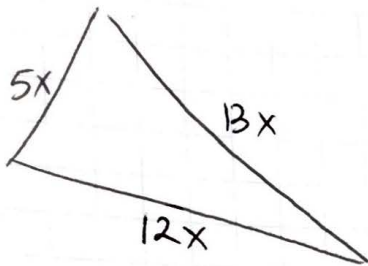
$$\begin{array}{r} x + x + 15 = 55 \\ -15 \quad -15 \\ \hline \end{array}$$

$$\begin{array}{r} 2x = 40 \\ \frac{2x}{2} = \frac{40}{2} \end{array}$$

$$\boxed{\begin{array}{r} \text{BROTHER 1} \\ x = 20 \end{array}}$$

$$\boxed{\begin{array}{r} \text{BROTHER 2} \\ 35 \end{array}}$$

10) RATIO 5:12:13



P = 15

$$5x + 12x + 13x = 15$$

$$\frac{30x}{30} = \frac{15}{30}$$

$$x = \frac{1}{2}$$

$$5x = 5 \frac{1}{2} = \boxed{\frac{5}{2}} \text{ OR } 2.5$$

$$12x = 12 \frac{1}{2} = \boxed{6}$$

$$13x = 13 = \boxed{\frac{13}{2}} \text{ OR } 6.5$$

11)

<u>FIRST NUMBER</u>	<u>SECOND NUMBER</u>	<u>THIRD NUMBER</u>
X	X+1	X+2

$$X + X + 1 + X + 2 = 126$$

$$3X + 3 = 126$$

NUMBERS ARE 41, 42 and 43

$$\frac{3X}{3} = \frac{123}{3}$$

$$X = 41$$

12) $6(x+1) = 2(5+3x)$ 13) $3(y+3) + 5y = 4(2y+1) + 5$

$$\begin{array}{r} 6x+6 \\ -6x \end{array} = \begin{array}{r} 10+6x \\ -6x \end{array}$$

$$6 = 10$$

NEVER TRUE

$$3y+9 + 5y = 8y+4 + 5$$

$$\underline{8y+9} = \underline{8y+9}$$

↑
SAME EXPRESSION

ALWAYS TRUE

14) $S = L(1-r)$, solve for r

$$\begin{array}{r} S = L - Lr \\ -L \quad -L \end{array}$$

$$\frac{S-L}{-L} = \frac{-Lr}{-L}$$

$$r = \frac{S-L}{-L} \text{ OR } \frac{L-S}{L}$$

$$15) A = \frac{Lw}{L+h} + \frac{wh}{-Lh} + Lh, \text{ solve for } w$$

$$A - Lh = Lw + wh$$

$$\frac{A - Lh}{L+h} = \frac{w(L+h)}{L+h}$$

$$w = \frac{A - Lh}{L+h}$$

$$16) \frac{4}{9}(y+3) = 9, \text{ solve for } y$$

$$\frac{4}{9}y + \frac{4}{9} \cdot 3 = 9$$

$$\frac{4}{9}y + \frac{4}{3} = 9$$

$$\frac{4}{9} \cdot \frac{9}{4}y = \left(9 - \frac{4}{3}\right) \cdot \frac{9}{4}$$

$$y = \frac{9}{4} \cdot 9 - 3$$

$$\frac{4}{3} \cdot \frac{9}{4} = 3$$

$$17) a(y+c) = b(y-c)$$

$$ay + ac = by - bc$$

$$ay - by = -bc - ac$$

$$\frac{y(a-b)}{a-b} = \frac{-c(a+b)}{a-b}$$

$$y = \frac{-c(a+b)}{a-b}$$

$$18) \frac{y+3}{t} = t^2 \cdot t$$

$$y+3 = t^3$$

$$y = t^3 - 3$$

$$19) 3y - yz = 2z$$

$$\frac{y(3-z)}{3-z} = \frac{2z}{3-z}$$

$$y = \frac{2z}{3-z}$$

$$20) 0.5(x-3) + (1.5-x) = 5x$$

$$0.5x - \cancel{1.5} + \cancel{1.5} - x = 5x$$

$$-0.5x = 5x$$

$$x = 0$$

$$21) 1.2(x+5) = 1.6(2x+5)$$

$$\cancel{1.2x} + 6 = 3.2x + 8$$

$$-1.2x \quad -1.2x$$

$$6 = 2x + \cancel{8}$$

$$-8 \quad -8$$

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

$$\boxed{x = -1}$$

$$22) 0.5(c+2.8) - c = 0.6c + 0.3$$

$$0.5c + 1.4 - c = 0.6c + 0.3$$

$$-0.5c + 1.4 = 0.6c + 0.3$$

$$+0.5c \quad +0.5c$$

$$1.4 = 1.1c + 0.3$$

$$-0.3 \quad -0.3$$

$$\frac{1.1}{1.1} = \frac{1.1c}{1.1}$$

$$\boxed{c = 1}$$

$$23) \frac{u}{5} + \frac{u}{10} - \frac{u}{6} = 1$$

$$\frac{6u + 3u - 5u}{30} = 1$$

COMMON DENOMINATOR

$$\frac{4u}{30} = 1 \cdot 30$$

$$\frac{4u}{4} = \frac{30}{4}$$

$$\boxed{u = 7.5}$$

$$24) V = \frac{\pi}{3} r^2 h \text{ , solve for } h$$

$$\frac{3V}{\pi r^2} = \frac{\pi r^2 h}{\pi r^2}$$

$$\boxed{\frac{3V}{\pi r^2} = h}$$

$$25) D = kA \left[\frac{T_2 - T_1}{L} \right] \text{ for } T_1$$

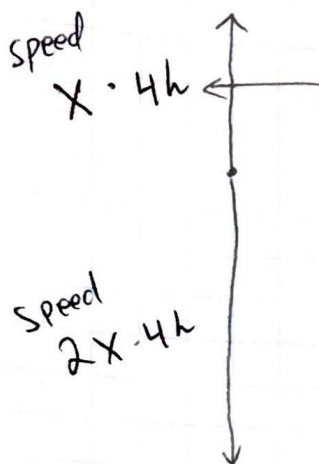
$$L \cdot D = \frac{kA T_2 - kA T_1}{L} \cdot L$$

$$DL = kA T_2 - kA T_1$$

$$kA T_1 = kA T_2 - DL$$

$$T_1 = \frac{kA T_2 - DL}{kA}$$

26)



Resulting units are miles

Because (speed) $\frac{\text{miles}}{\text{hr}} \cdot \text{hr} = \text{miles}$

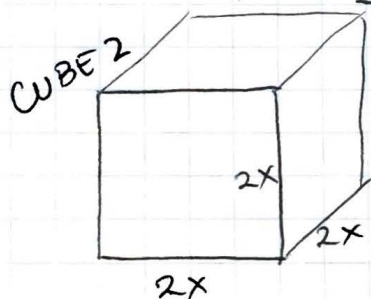
$$4x + 8x = 600$$

$$\frac{12x}{12} = \frac{600}{12}$$

TRAIN 1 $x = 50 \frac{\text{miles}}{\text{hr}}$

TRAIN 2 $100 \frac{\text{miles}}{\text{hr}}$

27)



TOTAL VOLUME FOR BOTH IS 72

Volume x^3

$(2x)^3$ OR $8x^3$

$$x^3 + 8x^3 = 72$$

$$\frac{9x^3}{9} = \frac{72}{9}$$

$$x^3 = 8$$

side of cube 1 $x = 2$

side of cube 2 is 4

28)

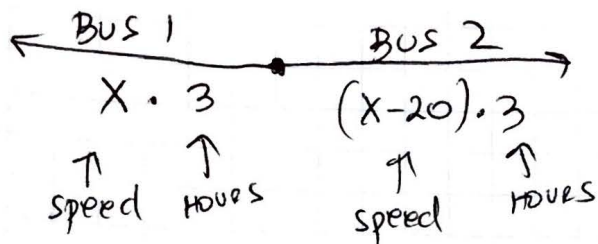
$$mV_1 = (m + M)V_2$$

$$m = \frac{mV_2 + MV_2}{V_1}$$

$$mV_1 = mV_2 + MV_2$$

HER WORK IS CORRECT

29)



$$3X + 3(X-20) = 270$$

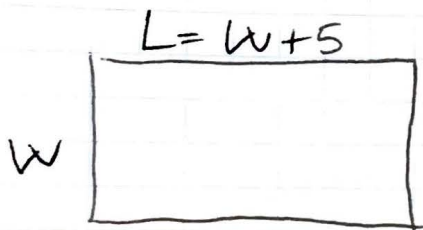
$$3X + 3X - 60 = 270$$

$$6X - 60 = 270$$

$$\frac{6X}{6} = \frac{330}{6}$$

BUS 1 $X = 55 \frac{\text{miles}}{\text{hr}}$ BUS 2 $35 \frac{\text{miles}}{\text{hr}}$

30)



$$P = 58$$

$$2W + 2L = 58$$

$$2 \cdot W + 2(W + 5) = 58$$

$$2W + 2W + 10 = 58$$

$$4W + 10 = 58$$

$$4W = 48$$

$$W = 12 \text{ cm}$$

$$L = W + 5 = 17 \text{ cm}$$

31)

odd integer 1odd int. 2odd int. 3odd int. 4

$$2X + 1 = 81$$

$$2X + 3 = 83$$

$$2X + 5 = 85$$

$$2X + 7 = 87$$

$$2X + 1 + 2X + 3 + 2X + 5 + 2X + 7 = 336$$

$$8X + 16 = 336$$

$$-16 \quad -16$$

$$\frac{8X}{8} = \frac{320}{8}$$

$$X = 40$$