Copy and complete each problem into your exercise book and solve for the variable.

Show all your working. Set your working out clearly and neatly as you have been taught!

[A] $4n + 1 = 12n - 15$

[B] $26k - 10 = 19k + 67$

[C] $21y + 2 = 25y - 70$

[D] $28p - 6 = 19p + 192$

[E] $20k + 1 = 28k - 135$

[F] $33p - 14 = 21p + 154$

Round your answers to the below equations to 1 d.p., if necessary

[G] $19.5h + 1 = 22.5h - 48.5$

[H] $26c - 6 = 17c + 58.8$

[J] $19.8k + 2 = 22.8k - 51.4$

[K] $30g - 8 = 18g + 23.2$

ANSWERS

ALGEBRA: Linear equations with unknowns on both sides

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Name:

Date:

[A]

$$4n + 1 = 12n - 15$$
$$+\ 15 \qquad\qquad +\ 15$$

$$4n + 16 = 12n$$
$$-\ 4n \qquad\qquad -\ 4n$$

$$\frac{16}{8} = \frac{8n}{8}$$

$$2 = n$$

$$\boxed{n = 2}$$

[B]

$$26k - 10 = 19k + 67$$
$$+\ 10 \qquad\qquad +\ 10$$

$$26k = 19k + 77$$
$$-\ 19k \qquad\qquad -\ 19k$$

$$\frac{7k}{7} = \frac{77}{7}$$

$$\boxed{k = 11}$$

[C]

$$21y + 2 = 25y - 70$$
$$+\ 70 \qquad\qquad +\ 70$$

$$21y + 72 = 25y$$
$$-\ 21y \qquad\qquad -\ 21y$$

$$\frac{72}{4} = \frac{4y}{4}$$

$$18 = y$$

$$\boxed{y = 18}$$

[D]

$$28p - 6 = 19p + 192$$
$$+\ 6 \qquad\qquad +\ 6$$

$$28p = 19p + 198$$
$$-\ 19p \qquad\qquad -\ 19p$$

$$\frac{9p}{9} = \frac{198}{9}$$

$$\boxed{p = 22}$$

[E]

$$20k + 1 = 28k - 135$$
$$+\ 135 \qquad\qquad +\ 135$$

$$20k + 136 = 28k$$
$$-\ 20k \qquad\qquad -\ 20k$$

$$\frac{136}{8} = \frac{8k}{8}$$

$$17 = k$$

$$\boxed{k = 17}$$

[F]

$$33p - 14 = 21p + 154$$
$$+\ 14 \qquad\qquad +\ 14$$

$$33p = 21p + 168$$
$$-\ 21p \qquad\qquad -\ 21p$$

$$\frac{12p}{12} = \frac{168}{12}$$

$$\boxed{p = 14}$$

[G]

19.5 h +   1.0   =   22.5 h −   48.5
            + 48.5   + 48.5

19.5 h +   49.5   =   22.5 h
− 19.5h   − 19.5h

$$\frac{49.5}{3} = \frac{3h}{3}$$

16.5   =   h

$$\boxed{h \;=\; 16.5}$$

[H]

26.0 c −   6.0   =   17.0 c +   58.8
            + 6.0   + 6.0

26.0 c =   17.0 c +   64.8
− 17c   − 17c

$$\frac{9c}{9} = \frac{64.8}{9}$$

$$\boxed{c \;=\; 7.2}$$

[J]

19.8 k +   2.0   =   22.8 k −   51.4
            + 51.4   + 51.4

19.8 k +   53.4   =   22.8 k
− 19.8k   − 19.8k

$$\frac{53.4}{3} = \frac{3k}{3}$$

17.8   =   k

$$\boxed{k \;=\; 17.8}$$

[K]

30.0 g −   8.0   =   18.0 g +   23.2
            + 8.0   + 8.0

30.0 g =   18.0 g +   31.2
− 18g   − 18g

$$\frac{12g}{12} = \frac{31.2}{12}$$

$$\boxed{g \;=\; 2.6}$$