

Algebra 1A ~ Q3 Quiz 2 Solution Key

$$\textcircled{1} \quad \frac{z}{48} = \frac{7}{8}$$

$$\frac{8z}{8} = \frac{7 \cdot 48}{8}$$

$$\boxed{z = 42}$$

USING PROPERTY OF PROPORTIONS THAT CROSS-PRODUCTS ARE EQUAL

NOTE: $\frac{8z}{8} = 1z = z$

NOTE: $\frac{7 \cdot 48}{8} = 7 \cdot 6 = 42$

$$\textcircled{2} \quad \frac{N}{50} = \frac{8}{10}$$

$$\frac{10N}{10} = \frac{8 \cdot 50}{10}$$

$$N = 8 \cdot 5$$

NOTE: $\frac{50}{10} = \frac{5}{1}$

$$\boxed{N = 40}$$

$$\textcircled{3} \quad \frac{9}{10}m = \frac{2}{3}$$

$$\frac{10}{9} \cdot \frac{9}{10}m = \frac{2}{3} \cdot \frac{10}{9}$$

$$\boxed{m = \frac{20}{27}}$$

TO "UNDO" A fraction, multiply by its reciprocal, $\frac{10}{9} \cdot \frac{9}{10} = \frac{90}{90} = 1$

Fraction multiplication: $\frac{\text{tops} \cdot \text{tops}}{\text{bottoms} \cdot \text{bottoms}}$

$$\textcircled{4} \quad 6 = -2(10N + 7)$$

$$6 = -20N - 14$$

$$+14 \qquad \qquad +14$$

$$\frac{20}{-20} = \frac{-20N}{-20}$$

$$\boxed{-1 = N} \text{ or } \boxed{N = -1}$$

$$\textcircled{5} \quad \frac{6}{4} = \frac{d}{20}$$

$$\frac{4d}{4} = \frac{6 \cdot 20}{4}$$

$$d = 6 \cdot 5$$

$$\boxed{d = 30}$$

$$\textcircled{6} \quad \begin{matrix} \text{cm} \\ \downarrow \\ \text{miles} \end{matrix} \frac{1.5}{60} = \frac{6}{d} \begin{matrix} \leftarrow \text{cm} \\ \uparrow \\ \text{UNKNOWN MILES} \end{matrix}$$

$$\frac{1.5d}{1.5} = \frac{6 \cdot 60}{1.5}$$

NOTE: $1.5 = \frac{3}{2}$

$$d = \frac{6 \cdot 60}{\frac{3}{2}} = \frac{6 \cdot 60 \cdot 2}{3}$$

$$\boxed{d = 240 \text{ miles}}$$

$\textcircled{7}$ ORIGINAL: 15.1 CHANGE: 19.4 - 15.1 = 4.3

$$\% \uparrow = \frac{\text{CHANGE}}{\text{ORIGINAL}} \cdot 100$$

$$= 0.28477 \cdot 100$$

$$= 28.477 = \boxed{28\% \uparrow}$$

$\textcircled{8}$ orig: \$49.95

new: 45.50

CHANGE 4.45

$$\% \downarrow = \frac{\text{CHANGE}}{\text{orig.}} \cdot 100$$

$$= \frac{4.45}{49.95} \cdot 100$$

$$= 8.91 = \boxed{9\% \downarrow}$$

$\textcircled{9}$ MP3: \$149.95 (NEAREST PENNY)

DISCOUNT: 15%

$$(\$149.95)(.15) = 22.4925 = 22.49$$

DISCOUNT PRICE

$$(\$149.95 - 22.49) = 127.46$$

TAX: 6% = .06

$$(\$127.46)(.06) = 7.6476 = 7.65$$

FINAL COST

$$\$127.46 + \$7.65 = \boxed{\$135.11}$$

$\textcircled{10}$ SHIRT: \$28 DISCOUNT: 10%

$\frac{1}{10}$ OF 28 = \$2.80

DISCOUNT PRICE \Rightarrow \$28 - \$2.80 = \$25.20

TAX: 6.5% = .065

TAX IS $(\$25.20)(.065) = 1.638 = \1.64

FINAL COST IS $\$25.20 + \$1.64 = \boxed{\$26.84}$