

(Ratios, Rates, Proportions)
(page 1 answer key)

① $\frac{18}{12} = \frac{3}{2}$

② $\frac{5}{4} = \frac{15}{8}$

$\frac{5}{4} \times \frac{3}{2} = \frac{15}{8}$

③ $1.98 \div 2$
\$0.99 per song

⑤ ~~$\frac{1}{8} = \frac{4}{32}$~~

⑥ ~~$\frac{2}{3} = \frac{10}{30}$~~

⑦ ~~$\frac{7}{4} = \frac{28}{16}$~~

④ $10.5 \div 3 =$
3.5 gal per hour

$32 = 32$

$30 \neq 60$

$112 = 112$

Yes, a proportion

NO

Yes

⑩ $\frac{150 \text{ steps}}{50 \text{ ft}} = \frac{12 \text{ steps}}{24 \text{ ft}}$

$3 \text{ steps/ft} = 3 \text{ steps/ft}$

Yes

⑧ $\frac{75 \text{ mi}}{3 \text{ hr}} = \frac{140 \text{ mi}}{4 \text{ hr}}$

$25 \text{ mi/hr} \neq 35 \text{ mi/hr}$

Not proportion

⑨ $\frac{12 \text{ gal}}{4 \text{ min}} = \frac{21 \text{ gal}}{7 \text{ min}}$

$3 \text{ gal/min} = 3 \text{ gal/min}$

Yes

⑪ ~~$\frac{3 \text{ rot}}{675 \text{ days}} = \frac{2 \text{ rot}}{730 \text{ days}}$~~

$1350 \neq 2190$

NO

⑫ $\frac{\$}{\text{hr}} = \frac{42}{6} = \frac{56}{h}$

⑬ $\frac{\text{games}}{\text{wins}} = \frac{9}{4} = \frac{6}{3}$

⑭ $\frac{1}{3}$ megabyte per second

⑮ $(2, 12) \rightarrow$ sound travels 12 km in 2 seconds
 $(4, 24) \rightarrow$ sound travels 24 km in 4 seconds

⑯ $\frac{15 \text{ min}}{3 \text{ levels}} = \frac{20 \text{ min}}{5 \text{ levels}}$

$5 \text{ min/level} \neq 4 \text{ min/level}$

Not a proportion because the unit rates are not the same.

⑰ $\frac{150 \text{ minutes}}{3 \text{ classes}} = \frac{x \text{ minutes}}{5 \text{ classes}}$

$3x = 750$

$x = 250 \text{ minutes}$

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⑱ $\frac{\$}{\text{shirt}} = \frac{24}{3} = \frac{c}{7}$

⑲ $\frac{\text{computer}}{\text{student}} = \frac{2}{5} = \frac{c}{145}$

⑳ $\frac{\text{Hr gr.}}{\text{all}} = \frac{5}{16} = \frac{x}{80}$

⑳ $\frac{a}{6} = \frac{15}{2}$

$2a = 90$

$a = 45$

㉑ $\frac{3}{4} = \frac{v}{14}$

$4v = 42$

$v = 10.5$

㉒ $\frac{36}{42} = \frac{24}{r}$

$36r = 1008$

$r = 28$

㉓ $\frac{x}{8} = \frac{3}{12}$

$12x = 24$

$x = 2$

㉔ $\frac{4}{24} = \frac{c}{36}$

$24c = 144$

$c = 6$

* ㉕ ~~$\frac{2x}{5} = \frac{9}{5}$~~

$30x = 45$

$x = 1.5$

* ㉖ ~~$\frac{5}{2} = \frac{d-2}{4}$~~

$2(d-2) = 20$

$2d - 4 = 20$

$2d = 24$
 $d = 12$

㉗ person did not cross-multiply

㉘ $\frac{48}{4} = \frac{x}{9}$

$4x = 432$

$x = 108$