28.8 1)

$$\frac{\log 5+2\log 6}{2\log 3+\log 2+1}=\frac{\log 5+\log 6^2}{\log 3^2+\log 2+\log 10}=\frac{\log 5+\log 36}{\log 9+\log 2+\log 10}=\frac{\log(5\cdot 36)}{\log(9\cdot 2\cdot 10)}=\frac{\log 180}{\log 180}=1$$

28.8 2)

$$\log 5+5\log 2-2\log 4=\log 5+\log 32-\log 16=\log\left(\frac{5\cdot 32}{16}\right)=\log 10=1$$

28.8 3)

$$2\log_3 6-\log_3 24+\frac{1}{2}\log_3 4=\log_3 36-\log_3 24+\log_3 2=\log_3\left(\frac{36\cdot 2}{24}\right)=\log_3 3=1$$

28.8 4)

$$\frac{1}{2}\log 25+\frac{1}{3}\log 8=\log 25^{\frac{1}{2}}+\log 8^{\frac{1}{3}}+=\log 5+\log 2=\log(5\cdot 2)=\log 10=1$$

28.8 5)

$$\frac{\log 2+\log 12-\log 3}{\log 14-\log 7}=\frac{\log\left(\frac{2\cdot 12}{3}\right)}{\log\left(\frac{14}{7}\right)}=\frac{\log 8}{\log 2}=\frac{\log 2^3}{\log 2}=\frac{3\log 2}{\log 2}=3$$

28.8 6)

$$\frac{2\log 6-\frac{1}{2}\log 16}{\log 48-4\log 2}=\frac{\log 6^2-\log\sqrt{16}}{\log 48-\log 16}=\frac{\log 36-\log 4}{\log 48-\log 16}=$$

$$=\frac{\log\frac{36}{4}}{\log\frac{48}{16}}=\frac{\log 9}{\log 3}=\frac{\log 3^2}{\log 3}=\frac{2\log 3}{\log 3}=2$$

28.8 7)

$$\frac{\log 7+3\log 2}{\log 2+\log 28}=\frac{\log 7+\log 2^3}{\log 2+\log 28}=\frac{\log(7\cdot 8)}{\log(2\cdot 28)}=\frac{\log 56}{\log 56}=1$$

28.8 8)

$$\frac{\log 3+3\log 2-\log 6}{2\log 2}=\frac{\log\frac{3}{6}+3\log 2}{2\log 2}=\frac{-\log 2+3\log 2}{2\log 2}=1$$

28.8 9)

$$\frac{\log 15-\log\frac{1}{6}-\log 10}{2\log 6-\log 12}=\frac{\log\left(\frac{15}{\frac{1}{6}\cdot 10}\right)}{\log\frac{36}{12}}=\frac{\log 9}{\log 3}=\frac{\log 3^2}{\log 3}=\frac{2\cancel{\log 3}}{\cancel{\log 3}}=2$$

28.8 10)

$$\frac{\log 5+\log 6}{1+\log 3}=\frac{\log(5\cdot 6)}{\log 10+\log 3}=\frac{\log 30}{\log 30}=1$$