

Lesson 2 p130/1-25, odds

$$\begin{aligned} \textcircled{1} f(7) &= 3(7) + 11 \\ &= 21 + 11 \\ &= \textcircled{32} \end{aligned}$$

$$\begin{aligned} \textcircled{3} g(-3) &= (-3)^2 + (-3) + 1 \\ &= 9 - 3 + 1 \\ &= \textcircled{7} \end{aligned}$$

$$\begin{aligned} \textcircled{5} f(0) &= 3(0) + 11 \\ &= \textcircled{11} \end{aligned}$$

$$\begin{aligned} \textcircled{7} g\left(\frac{1}{3}\right) &= \left(\frac{1}{3}\right)^2 + \frac{1}{3} + 1 \\ &= \frac{1}{9} + \frac{3}{9} + 1 \\ &= \textcircled{1\frac{4}{9}} \end{aligned}$$

$$\textcircled{9} \frac{f(5)}{g(5)} = \frac{3(5) + 11}{5^2 + 5 + 1} = \textcircled{\frac{26}{31}}$$

$$\textcircled{11} \frac{g(1)}{g(0)} = \frac{1^2 + 1 + 1}{0^2 + 0 + 1} = \textcircled{3}$$

$$\begin{aligned} \textcircled{13} f(g(2)) &= f(2^2 + 2 + 1) \\ &= f(7) \\ &= 3(7) + 11 \\ &= \textcircled{32} \end{aligned}$$

$$\begin{aligned} \textcircled{15} g(g(0)) &= g(0^2 + 0 + 1) \\ &= g(1) \\ &= 1^2 + 1 + 1 \\ &= \textcircled{3} \end{aligned}$$

$$\textcircled{17} f(r) = \textcircled{3r + 11}$$

$$\textcircled{19} g(k) = \textcircled{k^2 + k + 1}$$

$$\begin{aligned} \textcircled{21} f(s+t) &= 3(s+t) + 11 \\ &= \textcircled{3s + 3t + 11} \end{aligned}$$

$$\begin{aligned} \textcircled{23} g(f(x)) &= g(3x + 11) \\ &= (3x + 11)^2 + 3x + 11 + 1 \\ &= 9x^2 + 66x + 121 + 3x + 12 \\ &= \textcircled{9x^2 + 69x + 133} \end{aligned}$$

$$\begin{aligned} \textcircled{25} f(f(x)) &= f(3x + 11) \\ &= 3(3x + 11) + 11 \\ &= 9x + 33 + 11 \\ &= \textcircled{9x + 44} \end{aligned}$$

Functions - determine whether each is a function.

① Yes

② No

③ Yes

④ Yes

⑤ Yes

⑥ Yes

⑦ Yes

⑧ Yes

⑨ Yes

⑩ Yes

⑪ Yes

⑫ Yes

⑬ No

⑭ Yes

⑮ No

⑯ Yes

⑰ No

⑱ Yes

⑲ Yes

⑳ Yes

㉑ No

㉒ Yes

㉓ Yes

㉔ Yes