

# Practice Test: Rational Numbers

1. Circle all rational numbers.

$\textcircled{6}$      $\sqrt{5}$      $\textcircled{-3.01}$      $\textcircled{\frac{7}{4}}$      $\pi$      $\textcircled{\sqrt{4}}$      $\textcircled{1\frac{3}{8}}$      $\textcircled{-0.0\bar{2}}$

*5 is not a perfect square* (pointing to  $\sqrt{5}$ )  
*4 is a perfect square* (pointing to  $\sqrt{4}$ )  
 $\sqrt{4} = 2$

4

2. Determine which number is greater and write the appropriate symbol in the circle. Show how you know.

a)  $9.3 \textcircled{<} 9.\bar{3}$       b)  $\frac{17}{3} \textcircled{<} 5.68$       c)  $-\frac{17}{3} \textcircled{>} -5.68$

$9.3333... = 5\frac{2}{3} = 5.\bar{6}$        $= -5.\bar{6}$

3

3. a) Identify a fraction between 0.8 and 0.9.

$$0.85 = \frac{85}{100} = \frac{17}{20}$$

b) Identify a fraction between -3.4 and -3.5.

$$-3.45 = -3\frac{45}{100} = -3\frac{9}{20}$$

4

4. Sort the following numbers from least to greatest on the number line. Show how you know.

$-4.124$      $-0.75$      $3.5$      $-1\frac{3}{8}$   
 $\textcircled{-}4.124$      $\textcircled{-}\frac{3}{4}$      $3\frac{1}{2}$      $\textcircled{-}\frac{11}{8}$      $0.\bar{9}$

4

5. Estimate  $\sqrt{0.71}$ . Show your reasoning.

$\frac{7}{64}$  closer  $\frac{10}{81}$   
 $64 < 71 < 81$   
 $\sqrt{64} < \sqrt{71} < \sqrt{81}$   
 $8 < \sqrt{71} < 9$   
 $\sqrt{71} \approx 8.4$

$\rightarrow \sqrt{0.64} < \sqrt{0.71} < \sqrt{0.81}$   
 $0.8 < \sqrt{0.71} < 0.9$   
 $\sqrt{0.71} \approx 0.84$

3

6. Evaluate. Work must be shown to receive full marks.

$$\begin{aligned} \text{a) } 2.35 + (-1.65) \\ = 2.35 - 1.65 \\ = 0.7 \end{aligned}$$

$$\begin{aligned} \text{b) } -1.06 - (-0.83) \\ = -1.06 + 0.83 \\ = -0.23 \end{aligned}$$

$$\begin{aligned} \text{c) } -\frac{2}{5} + \left(-\frac{3}{5}\right) \\ = -\frac{2}{5} - \frac{3}{5} \\ = -\frac{5}{5} \\ = -1 \end{aligned}$$

$$\begin{aligned} \text{d) } -\frac{4}{5} - \left(-\frac{7}{10}\right) \\ = -\frac{8}{10} + \frac{7}{10} \\ = -\frac{1}{10} \end{aligned}$$

$$\text{e) } \frac{1}{4} \times \left(-\frac{3}{5}\right) = -\frac{3}{20}$$

$$\begin{aligned} \text{f) } -1\frac{4}{7} \div \left(-5\frac{1}{2}\right) \\ = -\frac{11}{7} \div -\frac{11}{2} \\ = -\frac{11}{7} \times -\frac{2}{11} \\ = \frac{2}{7} \end{aligned}$$

$$\begin{aligned} \text{3 g) } (-0.2 + 0.9)^2 + 9.8 \div (-0.7) \\ = (0.7)^2 + 9.8 \div (-0.7) \\ = 0.49 + -14 \\ = -13.51 \end{aligned}$$

$$\begin{aligned} \text{3 h) } \frac{5}{6} \times \left(-\frac{2}{3} + \frac{8}{3}\right)^2 - \frac{5}{12} \\ = \frac{5}{6} \times \left(\frac{6}{3}\right)^2 - \frac{5}{12} \\ = \frac{5}{6} \times (2)^2 - \frac{5}{12} \\ = \frac{5}{6} \times 4 - \frac{5}{12} \\ = \frac{20}{6} - \frac{5}{12} \\ = \frac{40}{12} - \frac{5}{12} \\ = \frac{35}{12} \text{ or } 2\frac{11}{12} \end{aligned}$$

4 7. Maya had \$200.44 in her bank account. Over the next two months she made four deposits of \$63.75. She also took out \$47.10, \$25.91, \$102, and \$58.43 during that time.

a) How much money is in her account at the end of the two months? Include a sentence answer.

$$\begin{aligned} 200.44 + 4(63.75) - 47.10 - 25.91 - 102 - 58.43 \\ = 200.44 + 255 - 233.44 \\ = 222 \end{aligned}$$

Maya has \$222 in her account.

b) Maya decides to give  $\frac{1}{4}$  of the remaining money to charity. What amount does she donate? Include a sentence answer.

$$\frac{1}{4} \times 222 = 55.5 \quad \text{Maya donates } \$55.50.$$