Printout

Math 9   Chapter 3 Rational Numbers Practice Test   Name:_____

Core Skills #1: Convert between mixed numbers, decimals and improper fractions.
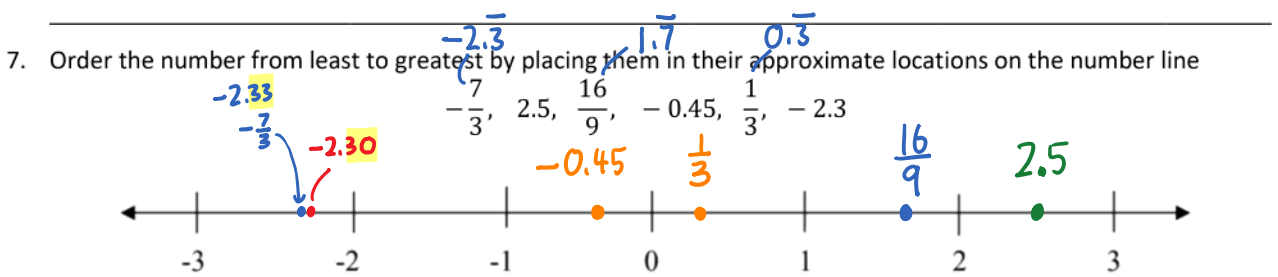
1. Write $-\frac{19}{4}$ as a decimal.

$$\begin{array}{r} 4.75 \\ 4\overline{)19.00} \\ 16 \\ \hline 30 \\ 28 \\ \hline 20 \\ 20 \end{array}$$

-4.75

Ans) ___-4.75___

2. Write 8.6 as a **mixed fraction** in the simplest form.

$8\frac{6}{10} \;^{3}_{5}$

Ans) ___$8\frac{3}{5}$___

3. Identify and circle the rational numbers.

(⭕$\sqrt{25}$) → 5   (⭕$-2.\overline{23}$) π $\sqrt{-16}$ (⭕$3\frac{4}{5}$) $9.342\ldots$ $\frac{3}{0}$ (⭕-0.25)   (⭕$\sqrt{-(2-6)}$) $\sqrt{4}=2$ $-(-4)$ (⭕$-\frac{8}{3}$)

4. Use either $<$ or $>$ to write a true statement

a) $-\frac{4}{5}$ ___$>$___ $-\frac{5}{6}$ $-0.8 \quad -0.83$

b) $2.28\overline{6}$ ___$>$___ $2.\overline{286}$ $28666 \uparrow \quad 286286 \uparrow$

5. Write a fraction between $3\frac{2}{3}$ and $2\frac{3}{4}$

$\frac{11}{3}^{\times4}_{\times4} \quad \frac{11}{4}^{\times3}_{\times3}$

$\frac{44}{12} \quad \frac{33}{12}$ $(34-43)$ ok.

ex) ___$\boxed{\frac{35}{12}}$___

6. Recite from our lessons or using your own word, describe what is a rational number.

___fraction $^{m}/_{n}$ but $n\neq\emptyset$ $\cdots\cdots$___

_____

7. Order the number from least to greatest by placing them in their approximate locations on the number line

$-\frac{7}{3},\; 2.5,\; \frac{16}{9},\; -0.45,\; \frac{1}{3},\; -2.3$

$-2.3\overline{3}$
$-\frac{7}{3}$
-2.30

$-2.\overline{3} \qquad 1.\overline{7} \qquad 0.\overline{3}$

Core Skills #2: Add and Subtract rational numbers.

8. Calculate $1.45 + (-3.32)$

3.32 Big
-1.45 Small
$\overline{1.87}$

$= 1.45 - 3.32$

$= -1.87$

Ans) ___-1.87___

9. Calculate $-3.2 - 10.4$

$-\boxed{?} - \boxed{?} = -\boxed{?+?}$ always

$\begin{array}{r} 10.4 \\ + 3.2 \\ \hline 13.6 \end{array}$

Ans) ___-13.6___

10. Calculate $-4.4 + (7.2)$

$+$ big $\rightarrow$ final Ans ⊕

$\begin{array}{r} 7.2 \\ -4.4 \\ \hline 2.8 \end{array}$ Big$-$small

Ans) ___2.8___

11. Calculate $-23.5 - (-2.35)$

$-23.5 + 2.35$ $-$big   ∴ Final Ans (−)

$\begin{array}{r} 23.50 \\ - 2.35 \\ \hline 21.15 \end{array}$

Ans) ___-21.15___

12. Calculate $\frac{1}{10} - (-\frac{2}{5})^{\times2}_{\times2}$

$= \frac{1}{10} + \frac{4}{10}$

$= \frac{5}{10}_2^1$

Ans) ___$\frac{1}{2}$___

13. Calculate $-\frac{1}{4} + (-2\frac{1}{3})$

whole # : bottom, Top
$2\times3+1=7$ (new top)

$= -\frac{1}{4}^{\times3}_{\times3} - \frac{7}{3}^{\times4}_{\times4}$

$= -\frac{3}{12} - \frac{28}{12} = \frac{-3-28}{12}$

$\boxed{-2\frac{7}{12}}$

$-\frac{31}{12}$

Ans) ___

Ans) $\dfrac{1}{2}$

Ans) $-\dfrac{7}{12}$

14. Calculate $1.8 - \left(-1\frac{2}{5}\right) + (-3.2)$, leave your answer in improper or <u>mixed fraction</u> from

$= 1\dfrac{\cancel{8}^{4}}{\cancel{10}_{5}} + \dfrac{7}{5} - 3\dfrac{\cancel{2}^{1}}{\cancel{10}_{5}}$

$= 1\dfrac{4}{5} + \dfrac{7}{5} - 3\dfrac{1}{5}$

Ans) $\varnothing$

$= \dfrac{9}{5} + \dfrac{7}{5} - \dfrac{16}{5} = \dfrac{\overset{16}{\overbrace{9+7}}-16}{5} = \dfrac{16-16}{5} = \dfrac{\cancel{0}}{5} = \varnothing$

Core Skills #3: Ordering and comparing rational numbers.

15. Identify and circle the smaller value in each pair	16. Write a fraction between $\dfrac{6 \times 3}{5 \times 3}$ and $\dfrac{2 \times 5}{3 \times 5}$
c) $\boxed{\dfrac{7}{8}}^{\times 9}$, $\dfrac{8}{9}^{\times 8}$ $\boxed{\dfrac{63}{72}}$ $\dfrac{64}{72}$	$\dfrac{18}{15}$ $\dfrac{10}{15}$ $(11-17)\text{ok}$
d) $\boxed{-\dfrac{3}{4}}$, -0.7 -0.75 -0.7 $-0.75 - 0.66 - 0.6$	Ans) $\dfrac{16}{15}$

17. Arrange the number from smallest to largest

$$-\dfrac{3}{4}, \quad 1.7, \quad -0.6, \quad 1\dfrac{1}{2}, \quad -0.\overline{6}$$

$-0.75 \qquad\qquad\qquad 1.5$

Ans) $-\dfrac{3}{4}, -0.\overline{6}, -0.6, 1\dfrac{1}{2}, 1.7$

18. Find the missing number in the equation. Show your work.

$-1\dfrac{1}{2} - \boxed{X} = \dfrac{5}{6} + \dfrac{3^{\times 3}}{2_{\times 3}}$ $-X = \dfrac{5}{6} + \dfrac{9}{6}$ $-X = \dfrac{14}{6}$ $X = -\dfrac{\cancel{14}^{7}}{\cancel{6}_{3}}$ Ans) $\boxed{-\dfrac{7}{3}}$

Core Skills #4: Multiply and Dividing rational numbers.

19. Calculate $\dfrac{\cancel{6}^{3}}{\cancel{21}_{7}} \times \dfrac{\cancel{3}^{1}}{\cancel{2}_{1}}$	21. Calculate $\dfrac{20}{27} \div \dfrac{5}{9}$
Ans) $\dfrac{3}{7}$	$\dfrac{20}{27}^{4}_{3} \times \dfrac{\cancel{9}^{1}}{5_{1}}$ Ans) $\dfrac{4}{3}$
20. Calculate $-1\dfrac{1}{8} \times 2\dfrac{2}{3}$ $3\dfrac{\cancel{9}}{\cancel{8}}\dfrac{\cancel{8}}{\cancel{3}}1$ Ans) -3	22. Calculate $\dfrac{\cancel{6}^{3}}{\cancel{20}_{10}} \div (3.2)$ forgot to flip! $\boxed{\dfrac{24}{25}}$ $= \dfrac{3}{10} \div 3\dfrac{\cancel{2}^{1}}{\cancel{10}_{5}}$ $= \dfrac{3}{10} \div \dfrac{16}{5} = \dfrac{3}{\cancel{10}_{2}} \times \dfrac{\cancel{5}^{1}}{16}$ Ans) $\dfrac{3}{32}$

23. As a fundraiser, the student council ordered $\boxed{130}$ birthday cards, with a picture of the school's logo. The cards cost the student council $1.45 each. They sold 126 cards for $2.00 each. How much profit did the student council make on their birthday card sale?

Spent $130 \times \$1.45 = \$188.50$ ⎤ Profit = $\$252 - 188.50$
earn $126 \times \$2 = \$252$ ⎦

Ans) $\$63.50$

Core Skills #5: Mixed fractions and decimals operations.

earn   126 × $2 = $252   Ans)_~~$05.50~~_

Core Skills #5: Mixed fractions and decimals operations.

24. Calculate $\left(\dfrac{6}{7} - \dfrac{1}{2}\right) \times \dfrac{14}{25}$

$$\dfrac{12}{14} - \dfrac{7}{14}$$

$$\dfrac{5}{14} \times \dfrac{14}{25}$$

Ans)_____$\dfrac{1}{5}$_____

25. Calculate $\dfrac{4}{9} + \dfrac{1}{6}\cdot\dfrac{1}{3} \times \left(-\dfrac{2}{3}\right)$

$$\dfrac{4}{9} - \dfrac{1}{9} = \dfrac{3}{9}$$

Ans)_____$\dfrac{1}{3}$_____

26. Calculate $\left(\dfrac{1}{7} + \dfrac{1}{3}\right) \div \left(\dfrac{1}{3} - \dfrac{1}{7}\right) + 1\dfrac{1}{4}$

$$= \dfrac{3}{21} + \dfrac{7}{21} \div \left(\dfrac{7}{21} - \dfrac{3}{21}\right) + \dfrac{5}{4}$$

$$= \dfrac{10}{21} \div \dfrac{4}{21} + \dfrac{5}{4}$$

$$= \left(\dfrac{10}{21} \times \dfrac{21}{4}\right) + \dfrac{5}{4} = \dfrac{5}{2} + \dfrac{5}{4} = \dfrac{10}{4} + \dfrac{5}{4}$$

$3\dfrac{3}{4}$

Ans)_____$\dfrac{15}{4}$_____