

The answers to the second practice exam.

1. Write 46,001,345,019 in words.

*Answer.* Forty-six billion one million three hundred forty-five thousand nineteen.

2. Subtract:  $11\frac{1}{5} - 4\frac{1}{4}$

*Answer.*

$$\begin{aligned} 11\frac{1}{5} - 4\frac{1}{4} &= 7\frac{1}{5} - \frac{1}{4} \\ &= \frac{36}{5} - \frac{1}{4} \\ &= \frac{144}{20} - \frac{5}{20} \\ &= \frac{139}{20} \\ &= 6\frac{19}{20} \end{aligned}$$

3. Add:  $6\frac{1}{2} + 7\frac{3}{5}$

*Answer.*

$$\begin{aligned} 6\frac{1}{2} + 7\frac{3}{5} &= \frac{13}{2} + \frac{38}{5} \\ &= \frac{65}{10} + \frac{76}{10} \\ &= \frac{141}{10} \\ &= 14\frac{1}{10} \end{aligned}$$

4. Convert 23.42 to a mixed number in lowest terms.

*Answer.*

$$\begin{aligned} 23.42 &= 23\frac{42}{100} \\ &= 23\frac{21}{50} \end{aligned}$$

5. Subtract:  $183,101 - 97,746 = 85,355$

6. Divide  $\frac{981.054}{5.2}$  and round your answer to the nearest hundredth.

*Answer.*

$$\frac{981.054}{5.2} \approx 188.66$$

□

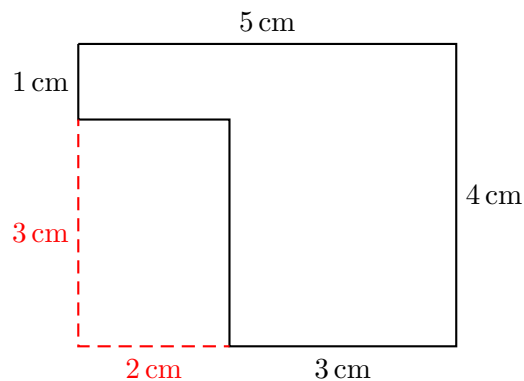
7. Perform:  $2\sqrt{9} + 4(5 + 11 \div 8) - 5^3$

*Answer.*

$$\begin{aligned} 2\sqrt{9} + 4(5 + 11 \div 8) - 5^3 &= 2 \cdot 3 + 4(5 + 11 \div 8) - 125 \\ &= 6 + 4(5 + 11 \div 8) - 125 \\ &= 6 + 4\left(5 + \frac{11}{8}\right) - 125 \\ &= 6 + 4\left(\frac{51}{8}\right) - 125 \\ &= 6 + \frac{51}{2} - 125 \\ &= 6 + \frac{51}{2} - 125 \\ &= \frac{12}{2} + \frac{51}{2} - \frac{250}{2} \\ &= -\frac{187}{2} \end{aligned}$$

□

8. Find the perimeter of the following shape:



*Answer.* The perimeter is **18 cm**.

□

9. The final grade in a class will be the average of the scores of five quizzes, rounded to the nearest tenth. If Jane's scores are 80.7, 78.5, 91.4, 86.3, and 75 what will her grade be?

*Answer.* The average is 82.38. When we round to the nearest tenth we get **82.4**.

□

10. Divide:  $7\frac{2}{5} \div \frac{3}{10}$

*Answer.*

$$\begin{aligned}7\frac{2}{5} \div \frac{3}{10} &= 7\frac{2}{5} \times \frac{10}{3} \\ &= \frac{37}{5} \times \frac{10}{3} \\ &= \frac{74}{3} \\ &= 24\frac{2}{3}\end{aligned}$$

□

11. Put the following in order from the smallest to the greatest:  $\frac{3}{5}, \frac{7}{10}, \frac{9}{20}, \frac{27}{40}$

*Answer.* We first turn the fractions to like fractions. The L.C.M of the denominators is 40, so we have to sort the following fractions:

$$\frac{24}{40}, \frac{28}{40}, \frac{18}{40}, \frac{27}{40}$$

We get

$$\frac{18}{40}, \frac{24}{40}, \frac{27}{40}, \frac{28}{40}$$

and using the original fractions:

$$\frac{9}{20}, \frac{3}{5}, \frac{27}{40}, \frac{7}{10}$$

□

12. Find the product of 35.78 and 1.26

*Answer.*  $35.78 \times 1.26 = 45.0828$

□

13. A basketball player makes 25 out of 40 free throws. What percentage of free throws did she make?

*Proof.* Using proportions we get:

$$\frac{25}{40} = \frac{x}{100}$$

We reduce the left hand side by 5:

$$\frac{5}{8} = \frac{x}{100}$$

We multiply both sides with 100

$$100 \cdot \frac{5}{8} = x$$

So we have

$$x = \frac{125}{2} = 62.5$$

So she made 62.5% of the free throws she attempted.

□

14. A round trip to a certain country that usually costs \$1500 is on sale at a 7% discount. What's the sale price?

*Answer.* We have that 7% of 1500 is

$$\frac{7}{100} \cdot 1500 = 7 \cdot 15 = 105$$

So the sale price is

$$\$1500 - \$105 = \$1395$$

□

15. Solve for  $y$ :  $\frac{y}{30} = \frac{21}{10}$

*Answer.* Multiplying both sides by 10 we get:

$$y = \frac{21}{10} \cdot 30 = 63$$

□

16. John was to buy a bike that costs \$350 and he saves \$12.5 a week. How long will take John to buy the bike?

*Answer.* We have

$$\frac{350}{12.5} = 28$$

So it will take John **28 weeks** to buy the bicycle.

□

17. A rectangle has length  $3\frac{3}{4}$  inches and width  $2\frac{1}{4}$  inches.

(a) Find the perimeter of the rectangle.

*Answer.* The perimeter is

$$3\frac{3}{4} + 2\frac{1}{4} + 3\frac{3}{4} + 2\frac{1}{4} = 12 \text{ inches}$$

□

(b) Find the area of the rectangle.

*Answer.* The area is

$$3\frac{3}{4} \times 2\frac{1}{4} = \frac{135}{16} = 8\frac{7}{16} \text{ square inches}$$

□

18. 80% of a number is 512. What is the number?

*Answer.* We have the equation

$$\frac{80}{100} \cdot x = 512$$

After cross-multiplying we get

$$8 \cdot x = 512 \cdot 10$$

Divide both sides by 8

$$x = \frac{5120}{8} = 8$$

□

19. If a 10 feet tree casts a 15 feet shadow, how long will the shadow of a 5.8 foot man be?

*Answer.* We have the proportion

$$\frac{15}{10} = \frac{x}{5.8}$$

Multiply both sides by 5.8 we get:

$$x = 1.5 \cdot 5.8 = 8.7$$

So a 5.8 feet man will cast a **8.7 feet** shadow.

□

20. A taxi charges \$5.50 for the first mile and \$2.25 for each additional mile. How much will a 16 miles ride?

*Answer.* After the initial mile each of the remaining 15 miles costs \$2.25. So together the last 15 miles cost  $15 \cdot 2.25 = 33.75$  dollars. Adding the cost of the initial mile we have that the whole ride costs

$$\$5.50 + \$33.75 = \$39.25$$

□