

## Practice Problems to Prepare for Trades Math Assessment Test

(Answers are located at the end of this practice exam)

For these practice problems, solve as many as you can on your own. There are 60 questions on this practice exam. The questions on the test will not be multiple-choice.

**Don't use a calculator. Show all work.**

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Whole Numbers -- Answer in the space provided. **Do not use a calculator.**

1. Give the place value of the digit 1 in the number 917,482.
  - A) thousands
  - B) ten thousands
  - C) hundred thousands
  - D) millions
2. Round to the thousands place. 85,542
3. Convert to standard form: one million, nine hundred eighty thousand, two hundred seventy.
4. Add.  $5760 + 10,355$ 
  - A) 15,015
  - B) 16,015
  - C) 15,115
  - D) 16,115
5. Subtract.  $9036 - 4877$ 
  - A) 5259
  - B) 5041
  - C) 4159
  - D) 4041

6. Multiply.      
$$\begin{array}{r} 231 \\ \times 146 \\ \hline \end{array}$$

- A) 32,536
- B) 2541
- C) 2126
- D) 33,726

7. Divide.  $2020 \div 3$

- A) 683
- B) 673 R1
- C) 673 R2
- D) 683 R2

8. The math department has \$300 to spend on a set of calculators. If the calculators cost \$32 each, how many calculators can the department purchase, and how much money will be left over?

- A) 8 calculators; \$2 left over
- B) 8 calculators; \$12 left over
- C) 9 calculators; \$2 left over
- D) 9 calculators; \$12 left over

9. A farmer wishes to place 3572 eggs in containers holding 12 eggs each. How many containers will be filled completely, and how many eggs will be left over?

- A) 296 containers will be filled completely with 8 eggs left over.
- B) 296 containers will be filled completely with 6 eggs left over.
- C) 297 containers will be filled completely with 8 eggs left over.
- D) 297 containers will be filled completely with 6 eggs left over.

10. Estimate the product by first rounding each number to nearest ten thousand.

$$39,709 \cdot 73,380$$

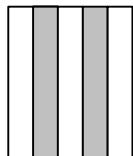
- A) 2,800,000,000
- B) 28,000,000
- C) 280,000,000
- D) 2,920,000,000

11. Simplify.  $70 - (30 \div 5) + 8$

- A) 16
- B) 56
- C) 72
- D) 84

Fractions -- Answer in the space provided. **Do not use a calculator. Show all work.**

12. Write a fraction that represents the shaded area.



- A)  $\frac{5}{3}$
- B)  $\frac{2}{5}$
- C)  $\frac{3}{5}$
- D)  $\frac{1}{2}$

13. Rewrite the fraction with the indicated denominator.

$$\frac{3}{5} = \frac{\underline{3}}{30}$$

- A)  $\frac{18}{30}$
- B)  $\frac{6}{30}$
- C)  $\frac{3}{30}$
- D)  $\frac{15}{30}$

14. Simplify the fraction to lowest terms. Write the answer as a fraction or a whole number.

$$\frac{99}{110}$$

- A)  $\frac{9}{11}$
- B)  $\frac{9}{10}$
- C)  $\frac{11}{9}$
- D)  $\frac{10}{9}$

15. Allen and Rajiv worked on their homework together. Allen finished 18 of the 30 problems he was assigned, and Rajiv finished 28 of the 35 problems he was assigned.

- What fractional part of his total number of homework problems did each boy finish?
- Which boy finished the greater fractional part?

16. Multiply and write the answer as a fraction.  $10 \cdot \left( \frac{2}{9} \right)$

17. Multiply. Write the answer as a mixed number or a whole number.

$$\left( 4\frac{2}{5} \right) \left( \frac{25}{44} \right) \left( 1\frac{1}{20} \right)$$

- A)  $4\frac{3}{8}$
- B)  $2\frac{5}{8}$
- C)  $4\frac{1}{88}$
- D)  $5\frac{5}{88}$

18. Divide and simplify the answer to lowest terms. Write the answer as a fraction or whole number.

$$\frac{9}{10} \div \frac{12}{5}$$

- A)  $\frac{3}{8}$
- B)  $\frac{54}{25}$
- C)  $\frac{8}{3}$
- D)  $\frac{25}{54}$

19. Edward's estate is to be split equally among his three heirs. If his estate is worth  $\$2\frac{3}{5}$  million, how much will each heir inherit?

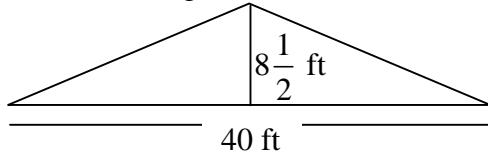
- A) Each heir will inherit  $\$ \frac{14}{15}$  million.
- B) Each heir will inherit  $\$ \frac{13}{15}$  million.
- C) Each heir will inherit  $\$ \frac{11}{15}$  million.
- D) Each heir will inherit  $\$ \frac{8}{15}$  million.

20. Rank the fractions from least to greatest.

$\frac{5}{6}, \frac{3}{4}, \frac{2}{3}$

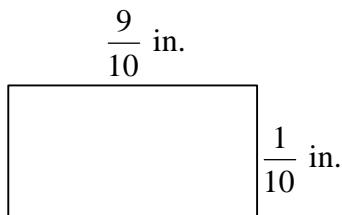
- A)  $\frac{3}{4}, \frac{2}{3}, \frac{5}{6}$
- B)  $\frac{2}{3}, \frac{5}{6}, \frac{3}{4}$
- C)  $\frac{3}{4}, \frac{5}{6}, \frac{2}{3}$
- D)  $\frac{2}{3}, \frac{3}{4}, \frac{5}{6}$

21. Find the area of the figure.



- A) The area is  $48\frac{1}{2}$  ft<sup>2</sup>.
- B) The area is  $24\frac{1}{4}$  ft<sup>2</sup>.
- C) The area is 340 ft<sup>2</sup>.
- D) The area is 170 ft<sup>2</sup>.

22. Find the perimeter and the area of the figure.



23. Add. Write the answer as a fraction simplified to lowest terms.

$$\frac{3}{4} + \frac{1}{8}$$

A)  $\frac{9}{8}$

B)  $\frac{3}{4}$

C)  $\frac{1}{2}$

D)  $\frac{7}{8}$

24. Add.

$$\begin{array}{r} 3\frac{1}{5} \\ + 2\frac{1}{4} \\ \hline \end{array}$$

A)  $6\frac{1}{9}$

B)  $5\frac{1}{20}$

C)  $5\frac{2}{9}$

D)  $5\frac{9}{20}$

25. Subtract. Write the answer as a fraction simplified to lowest terms.

$$\frac{9}{100} - \frac{3}{1000}$$

26. Phil bought  $\frac{15}{4}$  acres of land and then sold  $\frac{3}{4}$  acre. How much land does he have left?

- A) Phil has 24 acres left.
- B) Phil has  $\frac{9}{2}$  acres left.
- C) Phil has 3 acres left.
- D) Phil has 4 acres left.

27. Find the difference.

$$\begin{array}{r} 19 \frac{1}{10} \\ - 16 \frac{7}{20} \\ \hline \end{array}$$

- A)  $2\frac{3}{5}$
- B)  $3\frac{3}{5}$
- C)  $2\frac{3}{4}$
- D)  $3\frac{3}{4}$

Decimals -- Answer in the space provided. **Do not use a calculator.**

28. Write the decimal as a proper fraction or a mixed number. 1.7

- A)  $\frac{1.7}{10}$
- B)  $1\frac{7}{10}$
- C)  $\frac{17}{100}$
- D)  $1\frac{7}{100}$

29. Write the decimal as a proper fraction or a mixed number. 30.425

A)  $30\frac{17}{400}$

B)  $\frac{30,425}{100}$

C)  $30\frac{17}{40}$

D)  $30\frac{425}{100}$

30. Round to the nearest thousandth. 4.0455

A) 4.046

B) 4.045

C) 4.05

D) 4.04

31. Subtract.  $4 - 0.554$

32. Add.  $59.9 + 30.432 + 7.84$

33. Multiply.

$$8.27 \times 0.7$$

A) 0.5769

B) 5.769

C) 0.5789

D) 5.789

34. Divide. Write the quotient in decimal form.  $64.48 \div 1.04$

A) 58

B) 62

C) 59.2

D) 61.2

35. A contractor bought 31 concrete blocks at \$1.57 each, 5 bags of mortar at \$5.25 each, and 3 bags of masonry coating at \$5.75 each. What was the total bill excluding tax?

A) \$74.92

B) \$93.17

C) \$103.67

D) \$92.17

36. A membership at a health club costs \$560 per year. The club has a payment plan in which a member can pay \$50 down and the rest in 12 equal payments. How much is each payment?

- A) The monthly payment is \$42.50.
- B) The monthly payment is \$41.50.
- C) The monthly payment is \$43.50.
- D) The monthly payment is \$40.50.

37. Write the fraction as a decimal.  $\frac{13}{50}$

38. Write the fraction as a repeating decimal.  $\frac{14}{33}$

- A)  $0.\overline{43}$
- B)  $0.\overline{4}$
- C)  $0.\overline{42}$
- D)  $0.4\overline{2}$

39. Write 0.52 as a fraction.

40. The nightly price for a standard room at a hotel is \$119.95 with a nightly room tax of \$17.95. The hotel also charges \$0.90 per phone call made from the phone in the room. If a guest stays for 5 nights and makes 4 phone calls, how much is the total bill?

- A) \$691.10
- B) \$692.10
- C) \$693.10
- D) \$694.10

41. Conrad earned quiz grades of 18, 12, 14, and 18. What is his quiz average?

Ratio, Proportion, and Percent -- Do not use a calculator. Show all work.

42. Solve the proportion.

$$\frac{4.6}{h} = \frac{1.6}{4}$$

- A) 11
- B) 11.5
- C) 12
- D) 12.5

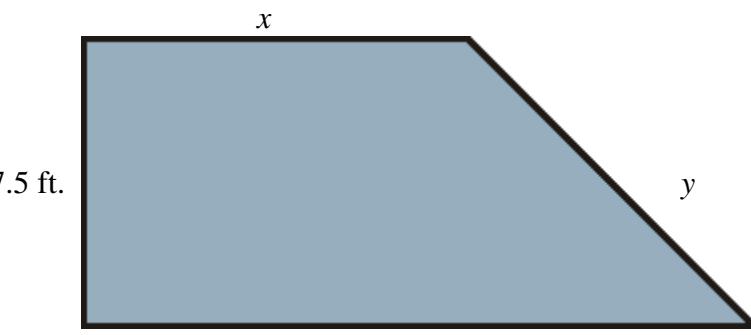
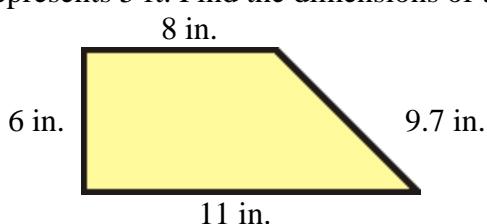
43. A 9-foot pole casts a shadow of 6 feet. How long will the shadow be for a 27-foot building?

- A) The shadow will be 17 ft.
- B) The shadow will be 18 ft.
- C) The shadow will be 19 ft.
- D) The shadow will be 20 ft.

44. Approximately 24 out of 100 Americans over the age of 12 smoke. How many smokers would you expect in a group of 650 Americans over the age of 12?

- A) 134 smokers are expected.
- B) 141 smokers are expected.
- C) 156 smokers are expected.
- D) 161 smokers are expected.

45. A carpenter makes a schematic drawing of a deck she plans to build. On the drawing, 4 in. represents 5 ft. Find the dimensions of the deck.



*(Figures not necessarily drawn to scale.)*

46. Complete the table.

	<b>Fraction</b>	<b>Decimal</b>	<b>Percent</b>
<b>a.</b>			0.8%
<b>b.</b>	$\frac{3}{5}$		
<b>c.</b>		3	
<b>d.</b>	$\frac{3}{4}$		
<b>e.</b>		0.24	
<b>f.</b>			65%

47. Solve the percent problem for the unknown base.

32 is 80% of what number?

48. 40% of 60.2 is what number?

- A) 24.08
- B) 23.08
- C) 104.5
- D) 105.5

49. 45 is what percent of 600?

- A) 7.5%
- B) 75%
- C) 750%
- D) 0.075%

50. Arlene deposited \$1,500 in an account that pays  $7\frac{1}{2}\%$  simple interest for 4 years.

- a. How much interest will she earn in 4 years?
- b. What will be the total value of the account after 4 years?
  - A) \$460; \$1,960
  - B) \$470; \$1,970
  - C) \$440; \$1,940
  - D) \$450; \$1,950

Geometry and Measurement -- Show all work.

51. The Seine River is 773 km long. Convert this to meters.

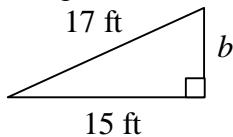
52. Convert the temperature using the appropriate formula.

$$F = \frac{9}{5} \cdot C + 32 \quad \text{or} \quad C = \frac{5}{9} \cdot (F - 32)$$

$$35^{\circ}\text{C} = \underline{\hspace{2cm}}^{\circ}\text{F}$$

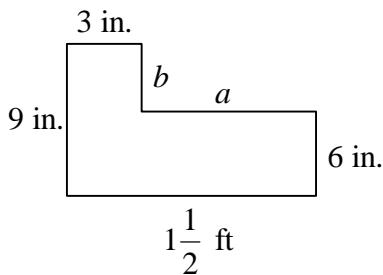
- A) 95 °F
- B) 100 °F
- C) 105 °F
- D) 110 °F

53. Find the length of the unknown side.

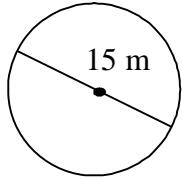


- A) 6 ft
- B) 8 ft
- C) 10 ft
- D) 12 ft

54. Find the lengths of the two missing sides labeled  $a$  and  $b$ . Then find the perimeter of the figure.

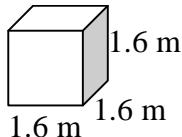


55. Find the area of the circle. Use  $3.14$  for  $\pi$ . Round to the nearest whole unit.



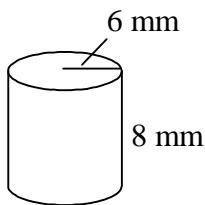
- A)  $2826 \text{ m}^2$
- B)  $177 \text{ m}^2$
- C)  $94 \text{ m}^2$
- D)  $706 \text{ m}^2$

56. Find the volume.



- A)  $2.56 \text{ m}^3$
- B)  $3.816 \text{ m}^3$
- C)  $4.096 \text{ m}^3$
- D)  $5.006 \text{ m}^3$

57. Find the volume. Use  $3.14$  for  $\pi$ .



Solving Equations -- **Show all work. Do not use a calculator.**

58. Solve the equation using the subtraction property of equality.

$$-16 = w + 5$$

- A) -21
- B) -22
- C) -11
- D) -12

59. Solve the equation using the multiplication or division properties of equality.

$$9a = -18$$

- A) -4
- B) -3
- C) -2
- D) -1

60. Solve the equation.  $8x - 11 = 2x + 1$

When you are done, check your answers with the attached answer key.

## Answer Key

1. B
2. 86,000
3. 1,980,270
4. D
5. C
6. D
7. B
8. D
9. C
10. A
11. C
12. B
13. A
14. B
15. a. Allen:  $\frac{3}{5}$ ; Rajiv:  $\frac{4}{5}$   
b. Rajiv finished the greater fractional part.
16.  $\frac{20}{9}$
17. B
18. A
19. B
20. D
21. D
22. perimeter: 2 in.  
area:  $\frac{9}{100}$  in.<sup>2</sup>
23. D
24. D
25.  $\frac{87}{1000}$
26. C
27. C
28. B
29. C
30. A
31. 3.446
32. 98.172
33. D
34. B
35. D
36. A
37. 0.26
38. C

39.  $\frac{13}{25}$

40. C

41. Conrad's average is 15.5.

42. B

43. B

44. C

45.  $x = 10$  ft;  $y = 12.125$  ft.;  $z = 13.75$  ft.

46.

	<b>Fraction</b>	<b>Decimal</b>	<b>Percent</b>
a.	$\frac{1}{125}$	0.008	0.8%
b.	$\frac{3}{5}$	0.6	60%
c.	3	3	300%
d.	$\frac{3}{4}$	0.75	75%
e.	$\frac{6}{25}$	0.24	24%
f.	$\frac{13}{20}$	0.65	65%

47. 40

48. A

49. A

50. D

51. 773,000 m

52. A

53. B

54.  $a = 1\frac{1}{4}$  ft or 15 in.,  $b = \frac{1}{4}$  ft or 3 in.;  
 $\text{perimeter} = 4\frac{1}{2}$  ft or 54 in.

55. B

56. C

57. 904.32 mm<sup>3</sup>

58. A

59. C

60. 2