

REVIEW PROBLEMS FOR NUMERICAL SKILLS ASSESSMENT TEST-Rev 1
(Note: No calculators are allowed at the time of the test.)

1. $4908 + 367 =$

2. $1907 - 78 =$

3. $73 \times 65 =$

4. $63 \div 7 =$

5. $128 \div 8 =$

6. $56 \overline{)70082}$

7. Anne saves \$175 every month out of her monthly salary of \$1485. What is her annual salary? How much does she save in one year?

8. Brian can type an average of 45 words per minute. His term report contains 2115 words. How long will it take him to type it?

9. $\frac{5}{6} + \frac{2}{3} =$

10. $3 + \frac{2}{5} =$

11. $\frac{1}{2} - \frac{3}{8} =$

12. $6\frac{3}{4} - \frac{2}{7} =$

13. $2\frac{2}{3} - 1\frac{3}{5} =$

14. $4\frac{1}{2} \times \frac{2}{15} =$

15. $3 \div \frac{2}{3} =$

16. $\frac{1}{2} \div \frac{5}{8} =$

17. $\frac{3}{25} \times \frac{5}{6} =$
18. $0.7 - 0.2 =$
19. $2.3 - .05 =$
20. $.07 + .6 =$
21. $1.23 \times 15.6 =$
22. $2.4 \div .08 =$
23. Express $\frac{5}{12}$ as a repeating decimal.
24. Change $\frac{7}{8}$ to a percent.
25. Convert .312 to a fraction expressed in lowest terms.
26. Convert .312 to a percent.
27. If Dan received $\frac{3}{5}$ of all votes cast in an election, what percent of the votes did he get?
28. 70% of 30 =
29. 16 is what percent of 80?
30. 15% of a number is 18. Find the number.
31. Susan bought a \$25.00 shirt, which is reduced by one-fifth. If there is a 4% sales tax, how much tax did she pay?
32. A house valued at \$90,000 is assessed for $\frac{3}{4}$ of its value. If the tax levy is \$2 per \$100 of assessed valuation per year, what is the yearly tax bill?
33. Find the simple interest on \$900 for 3 years 6 months at 12% interest using the formula $i = prt$, where t is expressed in years.
34. A salesperson earns a weekly salary of \$150 and a 4% rate of commission on her sales. She sold \$1750 worth of merchandise one week. How much did she earn that week?

35. The wages of 2 people working at Burger King totaled \$256 for 4 weeks. At the same weekly rate, what is the total earned by 5 people for 3 weeks?
36. If a room measures 2 yards 5 feet and 3 inches in length what is its length in feet?
37. Solve for p in the proportion: $\frac{p}{32} = \frac{3}{4}$
38. If you can travel 225 km in 3 hours, how far can you go in 8 hours?
39. If a person scored 92, 87, 92, 76 and 83 on daily tests, what was his average score?
40. A rectangular flower bed is to be fenced in using 96 feet of fencing. If the length is three times as long as the width, find the length and width.
41. The average of two numbers is -22. If one of the numbers is 10, what is the other number?
42. $7 \text{ feet } 3 \frac{2}{3} \text{ inches} - 4 \text{ feet } 4 \frac{1}{2} \text{ inches} =$
43. Convert 10 feet per second ($\frac{10 \text{ feet}}{\text{sec}}$) to feet per minute. 2
44. $\frac{(12-2)^2}{4} - 2(6-3)^2$
45. $\sqrt{49} =$
46. What is the least common multiple of 6 and 10?
47. What is the greatest common factor of 6 and 10?
48. Solve for x if: $x + 23 = 15$
49. Solve for a if: $7a = 210$
50. $6x^4 - 4x^4 =$
51. Factor 120 into prime factors.
52. $|-7| =$
53. $10^4 =$
54. $6.25 \times 10^2 =$
55. $1.33 \times 10^{-3} =$

SOLUTIONS TO NUMERICAL SKILLS ASSESSMENT REVIEW

$$\begin{array}{r} 1. \quad 4908 \\ + 367 \\ \hline 5275 \end{array}$$

$$\begin{array}{r} 2. \quad 1907 \\ - 78 \\ \hline 1829 \end{array}$$

$$\begin{array}{r} 3. \quad 73 \\ \times 65 \\ \hline 365 \\ 438 \\ \hline 4745 \end{array}$$

$$\begin{array}{r} 4. \quad 7 \overline{)63} \\ \underline{63} \\ 0 \end{array}$$

$$\begin{array}{r} 5. \quad 8 \overline{)128} \\ \underline{8} \\ 48 \\ \underline{48} \\ 0 \end{array}$$

$$\begin{array}{r} 6. \quad \begin{array}{r} 1251 \text{ R}26 \\ \hline 56 \overline{)70082} \\ \underline{56} \\ 140 \\ \underline{112} \\ 288 \\ \underline{280} \\ 82 \\ \underline{56} \\ 26 \end{array} \end{array}$$

7. If her monthly salary is \$1485, then her yearly salary is 12 times \$1485.

$$\begin{array}{r} \$1485 \\ \times \quad 12 \\ \hline 2970 \\ 1485 \\ \hline 17820 \end{array}$$

The yearly salary is \$17,820.

$$\begin{array}{r} 175 \\ \times 12 \\ \hline 350 \\ 175 \\ \hline 2100 \end{array}$$

She saves \$175 every month, so that in one year she saves 12 times \$175.
She saves \$2,100 in one year.

8. If he can type 45 words per minute and he needs to type 2115 words, then to find out how long it will take him divide 2115 by 45.

$$\begin{array}{r} 47 \\ 45 \overline{)2115} \\ \underline{180} \\ 315 \\ \underline{315} \\ 0 \end{array}$$

It will take him 47 minutes.

9. $\frac{5}{6} + \frac{2}{3} =$ The least common denominator (L.C.D.) is 6.

$$\frac{5}{6} + \frac{4}{6} = \frac{9}{6} = 1\frac{3}{6} = 1\frac{1}{2}$$

10. $3 + \frac{2}{5}$ L.C.D. is 5.

$$3 + \frac{2}{5} = \frac{3}{1} + \frac{2}{5} = \frac{15}{5} + \frac{2}{5} = \frac{17}{5} = 3\frac{2}{5}$$

11. $\frac{1}{2} - \frac{3}{8} =$ L.C.D. is 8.

$$\frac{1}{2} - \frac{3}{8} = \frac{4}{8} - \frac{3}{8} = \frac{1}{8}$$

12. $6\frac{3}{4} - \frac{2}{7} =$ L.C.D. is 28.

$$\begin{array}{r} 6\frac{3}{4} = 6\frac{21}{28} \\ - \frac{2}{7} = - \frac{8}{28} \\ \hline 6\frac{13}{28} \end{array}$$

13. $2\frac{2}{3} - 1\frac{3}{5} =$ L.C.D. is 15.

$$\begin{array}{r} 2\frac{2}{3} = 2\frac{10}{15} \\ - 1\frac{3}{5} = 1\frac{9}{15} \\ \hline 1\frac{1}{15} \end{array}$$

14. $4\frac{1}{2} \times \frac{2}{15}$ First convert the mixed numeral to an improper fraction.

$$4\frac{1}{2} = \frac{9}{2}$$

$$\frac{9}{2} \times \frac{2}{15} = \frac{3}{5}$$

15. $3 \div \frac{2}{3}$ Invert the divisor and multiply.

$$\frac{3}{1} \div \frac{2}{3} = \frac{3}{1} \times \frac{3}{2} = \frac{9}{2} = 4\frac{1}{2}$$

16. $\frac{1}{2} \div \frac{5}{8}$ Invert the divisor and multiply.

$$\frac{1}{2} \times \frac{8}{5} = \frac{4}{5}$$

17. $\frac{3}{25} \times \frac{5}{6} = \frac{1}{10}$

For problems 18, 19 and 20: To add or subtract decimals, the decimal point must be lined up.

18. $0.7 - 0.2$

$$\begin{array}{r} 0.7 \\ - 0.2 \\ \hline 0.5 \end{array}$$

19. $2.3 - .05$

$$\begin{array}{r} 2.30 \\ - .05 \\ \hline 2.25 \end{array}$$

20. $.07 + .6$

$$\begin{array}{r} .07 \\ + .60 \\ \hline .67 \end{array}$$

21. To multiply decimals, multiply as in the multiplication of whole numbers. The numbers of decimal places in the answer is the total number of decimal places in the numbers being multiplied. Hence, this problem will have 3 decimal places in the answer.

$$\begin{array}{r} 1.23 \times 15.6 \\ 1.23 \\ \hline 738 \\ 615 \\ \hline 123 \\ \hline 19.188 \end{array}$$

22. $.08 \overline{)2.4}$ Move the decimal point two places to the right in the divisor and dividend. Then divide.

$$\begin{array}{r} .30 \\ .08 \overline{)2.40} \\ \underline{24} \\ 0 \\ \underline{0} \end{array}$$

23. To express a fraction as a decimal, divide the numerator by the denominator.

$$\begin{array}{r} .41\overline{66} \\ 12 \overline{)5.0000} \\ \underline{48} \\ 20 \\ \underline{12} \\ 80 \\ \underline{72} \\ 80 \\ \underline{72} \\ 8 \end{array}$$

This pattern will keep repeating so we put a line over the 6 in the quotient to show that it repeats.

24. To change a fraction to a percent, convert it to a decimal and then move the decimal point 2 places to the right to convert the decimal to a percent.

$$\begin{array}{r} .875 \\ 8 \overline{)7.000} \\ \underline{64} \\ 60 \\ \underline{56} \\ 40 \\ \underline{40} \end{array} \quad .875 = 87.5\%$$

25. $.312 = \frac{312}{1000} = \frac{39}{125}$ Divide numerator and denominator by 8 to reduce the fraction.

26. $.312 = 31.2\%$ To convert a decimal to a percent move the decimal point 2 places to the right.

27.
$$\begin{array}{r} .60 \\ 5 \overline{)3.00} \\ \underline{30} \\ 0 \\ \underline{0} \end{array}$$
 See explanation for problem #24.
$$.60 = 60\%$$

28. 70% of 30 $70\% = .70$ Convert 70% to a decimal and multiply times 30.
$$\begin{array}{r} 30 \\ \times .70 \\ \hline 21.00 = 21 \end{array}$$

29. 16 is what percent of 80? Make a fraction, indicating what fractional part 16 is of 80.
Reduce and then convert to a percent.
$$\frac{16}{80} = \frac{1}{5}$$

$$\begin{array}{r} .20 \\ 5 \overline{)1.00} \\ \underline{10} \\ 0 \\ \underline{0} \end{array} = 20\%$$

30. Change 15% to a decimal. $15\% = .15$ Divide 18 by .15
$$\begin{array}{r} 120 \\ .15 \overline{)18.00} \\ \underline{15} \\ 30 \\ \underline{30} \\ 0 \\ \underline{0} \end{array}$$

31. Take $\frac{1}{5}$ of \$25: $\frac{1}{5} \times \frac{25}{1} = \5
The reduced price is $\$25 - \$5 = \$20$
4% of \$20: $.04 \times 20 = 20$
$$\begin{array}{r} \underline{\times .04} \\ 20 \\ \hline .80 \end{array}$$

Hence, there is \$0.80 tax that she will pay.

32. Take $\frac{3}{4}$ of \$90,000: $\frac{3}{4} \times \frac{90000}{1} = \$67,500$

The assessed valuation is \$67,500. Divide \$67,500 by \$100 and get 675 which is to be multiplied by 2, resulting in \$1350 as the yearly tax bill.

33. Convert 3 years 6 months to 3.5 years, and 12% to .12

$$\begin{aligned} i &= prt \\ i &= (900)(.12)(3.5) = 378 \\ i &= \$378 \end{aligned}$$

34. Take 4% of \$1750 to find her commission:

$$\begin{array}{r} 1750 \\ \times .04 \\ \hline 70.00 \end{array}$$

Add \$70 commission to the \$150 weekly salary to get her earning for the week.

$$\begin{array}{r} \$150 \\ + \$70 \\ \hline \$220 \end{array}$$

35. The 2 people earned \$256 for 4 weeks. We then know that each person earned $\$256 \div 2$ or \$128. If he earned \$128 for 4 weeks, then he earned $\$128 \div 4$ or \$32 for one week.

If one person earned \$32 for one week, then 5 people earned $5 \times \$32 = \160 for one week. For three weeks they then earned $\$160 \times 3 = \480 .

36. There are 3 feet in one yard. Therefore, 2 yards = 6 feet.

There are 12 inches in one foot. Therefore, 3 inches = $\frac{3}{12} = \frac{1}{4}$ foot.

2 yards 5 feet and 3 inches = $6 + 5 + \frac{1}{4}$ feet = $11\frac{1}{4}$ feet or 11.25 feet.

37. Cross multiply to solve the proportion:

$$\frac{p}{32} = \frac{3}{4}$$

$$\begin{aligned} 4p &= 96 \\ p &= 24 \end{aligned}$$

38. Set up a proportion and then cross multiply to solve it.
Let x = distance in 8 hours. You can go 600 km in 8 hours.

$$\frac{225}{3} = \frac{x}{8}$$

$$3x = 1800$$
$$x = 600$$

39. To find the average, add the scores and divide by the number of tests.

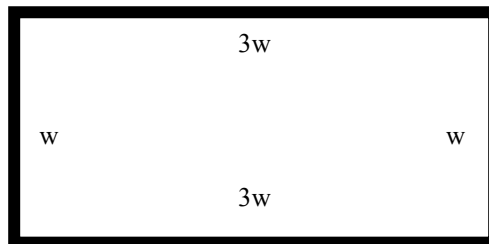
$$\begin{array}{r} 92 \\ 87 \\ 92 \\ 76 \\ + 83 \\ \hline 430 \end{array}$$

$$\begin{array}{r} 86 \\ 5 \overline{)430} = \text{average test score} \\ \underline{40} \\ 30 \\ \underline{30} \end{array}$$

40. Sketch the rectangle and label the length as three times the width.
To go all the way around it, add each side:

$$w + 3w + w + 3w = 96$$
$$8w = 96$$
$$w = 12$$

The width is 12 feet.
The length is 3×12 or
36 feet.



41. Let n = the other number $\frac{n+10}{2} = -22$

Multiply both sides of the equation by 2: $n + 10 = -44$

Add -10 to both sides:

$$\begin{array}{r} n + 10 = -44 \\ \underline{-10 = -10} \\ n = -54 \end{array}$$

The other number is -54 .

$$\begin{array}{rcl} 42. & 7 \text{ feet } 3\frac{2}{3} \text{ inches} & = 7 \text{ feet } 3\frac{4}{6} \text{ inches} \\ & - 4 \text{ feet } 4\frac{1}{2} \text{ inches} & = - 4 \text{ feet } 4\frac{3}{6} \text{ inches} \\ & & 2 \text{ feet } 11\frac{1}{6} \text{ inches} \end{array}$$

43. There are 60 seconds in one minute. $\frac{10 \text{ feet}}{\text{sec.}} \times \frac{60 \text{ sec.}}{1 \text{ min.}} = \frac{600 \text{ ft.}}{\text{min.}}$

44. $\frac{(12-2)^2}{4} - 2(6-3)^2$

First simplify what is inside the (): $\frac{(10)^2}{4} - 2(3)^2$

Next, do the squaring: $\frac{100}{4} - 2(9)$

Divide and multiply and then subtract: $25 - 18 = 7$

45. $\sqrt{49} = 7$ because $7^2 = 49$

46. 30 is the least common multiple of 6 and 10 because it is the smallest number which is divisible by both 6 and 10.

47. 2 is the greatest common factor of 6 and 10 because it is the largest number which divides evenly into 6 and 10.

48. $x + 23 = 15$

Add -23 to both sides of the equation:

$$\begin{array}{r} x + 23 = 15 \\ \underline{-23 \quad -23} \\ x \quad \quad = -8 \end{array}$$

49. $7a = 210$

Multiply both sides of the equation by $\frac{1}{7}$

$$\frac{1}{7} \cdot 7a = 210 \cdot \frac{1}{7} \quad a = 30$$

50. $6x^4 - 4x^4 = (6-4)x^4 = 2x^4$ Subtract like terms.

51. $120 = 2^3 \times 3 \times 5$

52. $|-7| = 7$ The absolute value of a number is positive.

53. $10^4 = 10000$

54. $6.25 \times 10^2 = 6.25 \times 100 = 625$ Move the decimal two places to the right.

55. $1.33 \times 10^{-3} = 1.33 \times .001 = .00133$ Move the decimal three places to the left.