

SHOW ALL WORK on this test or on separate! Circle final answers. CALCULATORS—YES!!

In 1-6, perform the indicated operations. Round answers to nearest thousandth.

$$1. 2.61 + 3.95 + 0.412 \quad 2. -7.43 - 0.901 \quad 3. -2.33 \times 1.6$$

$$4. 0.085 \div (0.25) \quad 5. (-0.2)^2 + 1.75 \quad 6. 2.4x - 3.2x - 1.8x$$

In 7-10, express each decimal as a fraction or mixed number in lowest terms.

$$7. 3.25 \quad 8. 16.002 \quad 9. 0.0025 \quad 10. 0.495$$

In 11-13, insert $<$, $>$, or $=$ to make a true statement.

$$11. 67.029 \quad 67.209 \quad 12. \frac{1}{12} \quad 0.0833 \quad 13. 0.\overline{62} \quad 0.\overline{62}$$

In 14-18, solve for x :

$$14. 0.4x = 0.24 \quad 15. x - 0.5x = 8.5 \quad 16. 2x + 7 = x - 4.3$$

$$17. x - (2x + 6.9) = 18.6 \quad 18. \frac{x}{0.5} = 1.9$$

In 19-20, simplify:

$$19. (0.25 - 0.8)^2 \quad 20. \frac{5.20 + 6.38}{-0.2}$$

In 1-10, you may use a calculator, or you may do exercises by hand.

1.
$$\begin{array}{r} 2.61 \\ 3.95 \\ \hline 0.412 \\ \hline 6.972 \end{array}$$

2.
$$\begin{array}{r} -7.43 \\ -0.901 \\ \hline -8.331 \end{array}$$

3.
$$\begin{array}{r} -2.33 \\ \times 1.6 \\ \hline -3.728 \end{array}$$

4.
$$0.3 \div 10.085 = 0.034$$

5.
$$\begin{array}{r} (-0.2)^2 + 1.75 \\ 0.04 + 1.75 \\ \hline 1.79 \end{array}$$

6.
$$2.4x - 3.2x - 1.8x = -2.6x$$

7.
$$3.25 = \frac{1}{34} \approx \frac{13}{4}$$

8.
$$16.002 = 16 \frac{2}{1000} = 16 \frac{1}{500}$$

9.
$$\frac{0.0025}{10000} = \frac{25}{400}$$

10.
$$0.495 = \frac{495}{1000} = \frac{99}{200}$$

11.
$$67.029 < 67.209$$

12.
$$\frac{1}{12} = .08333 > .08330$$

13.
$$\begin{array}{l} 0.\overline{62} = 0.6262... \\ 0.6\overline{2} = 0.6222... \\ 0.6262 > 0.6222... \end{array}$$

14.
$$\begin{array}{l} 0.4x = 0.24 \\ x = \frac{0.24}{.4} = \frac{2.4}{4} = 0.6 \end{array}$$

15.
$$\begin{array}{l} x - 2.5x = 8.5 \\ -.5x = 8.5 \\ x = \frac{8.5}{-.5} = -17 \end{array}$$

16.
$$\begin{array}{r} 2x + 7 = x - 4.3 \\ -x \quad -x \\ \hline x + 7 = -4.3 \\ -7 \quad -7 \\ \hline x = -11.3 \end{array}$$

17.
$$\begin{array}{r} x - (2x + 6.9) = 18.6 \\ x - 2x - 6.9 = 18.6 \\ +6.9 \quad +6.9 \\ \hline -x = 25.5 \\ x = -25.5 \end{array}$$

18.
$$\begin{array}{l} .75x = 1.9 \\ x = (0.5)(1.9) \\ x = 0.95 \end{array}$$

19.
$$\begin{array}{l} (0.25 - 0.5)^2 \\ = (-.25)^2 = 0.0625 \end{array}$$

20.
$$\begin{array}{r} (5.20 + 6.38) \\ -0.2 \\ \hline 11.58 \\ -0.2 \\ \hline -11.38 \end{array}$$

21.
$$\begin{array}{l} C = \pi d \\ = 3.14(8) \\ = 25.12 \end{array}$$

22.
$$\begin{array}{l} A = LW \\ A = 20(10.5) \\ = 210 \\ \text{Cost} = 210(2.58) \\ = 541.80 \end{array}$$

23.
$$\begin{array}{l} \frac{2}{3} \stackrel{?}{=} \frac{10}{15} \\ 2 \cdot 15 = 3 \cdot 10 \\ 30 = 30 \\ \text{TRUE} \end{array}$$

24.
$$\begin{array}{l} \frac{9}{15} \stackrel{?}{=} \frac{27}{45} \\ 9 \cdot 45 = 15 \cdot 27 \\ 405 = 405 \\ \text{TRUE} \end{array}$$

25.
$$\begin{array}{l} \frac{x}{8} = \frac{20}{15} \\ 15x = 20 \cdot 3 \\ 15x = 60 \\ x = 4 \end{array}$$

26.
$$\begin{array}{l} \frac{5}{8} = \frac{x}{32} \\ 8x = 5 \cdot 32 \\ 8x = 160 \\ x = 20 \end{array}$$

27.
$$\begin{array}{l} \frac{2}{3} = \frac{6}{x} \\ \frac{2}{3} \cdot x = \frac{6}{1} \cdot 3 \\ 2x = 18 \\ x = 9 \end{array}$$

28.
$$\begin{array}{l} \frac{x}{0.5} = \frac{3.4}{2} \\ 2x = (0.5)(3.4) \\ 2x = 1.7 \\ x = \frac{1.7}{2} = 0.85 \end{array}$$


29.
$$\begin{array}{l} \frac{1}{4} = \frac{x}{8} \\ 8x = 1 \cdot \frac{1}{2} \\ 8x = \frac{1}{2} \\ \frac{1}{8} 8x = \frac{1}{8} \cdot \frac{1}{2} \\ x = \frac{1}{16} \end{array}$$


30.
$$\sqrt{64} = 8$$


3.
$$\begin{array}{l} \frac{2}{3}x = 3.4 \\ 2x = 12 \\ x = 6 \end{array}$$

31.
$$\sqrt{\frac{25}{49}} = \frac{5}{7}$$

32.
$$\sqrt{163} \approx 12.767$$

33.  $5^2 + 12^2 = x^2$
 $25 + 144 = x^2$
 $169 = x^2$
 $x = \pm\sqrt{169}$
 $x = 13$

34.  $x^2 + 10^2 = 12^2$
 $x^2 + 100 = 144$
 $x^2 = 44$
 $x = \pm\sqrt{44}$
 $x \approx 6.633$

35.  $x^2 + 4^2 = 16^2$
 $x^2 + 16 = 256$
 $x^2 = 240$
 $x = \pm\sqrt{240}$
 $x \approx 15.492$

36a) $329\% = 3.29$
 b) $5.3\% = 0.053$
 c) $0.10\% = 0.001$
 37a) $0.321 = 32.1\%$
 b) $3.9 = 390\%$
 c) $0.73 = 73\%$

$\frac{IS}{OF} = \frac{\%}{100}$

38a) $172\% = \frac{172}{100} = \frac{43}{25}$

b) $58\% = \frac{58}{100} = \frac{29}{50}$

c) $0.39\% = \frac{3}{1000}$

39a) $\frac{2}{5} = 0.40 = 40\%$

b) $\frac{7}{9} = 0.777\dots = 77.7\%$

c) $3\frac{5}{7} = 3.714285714285\dots = 371.429\%$

40. $x = .12(200)$ OR $\frac{x}{200} = \frac{12}{100}$
 $x = 24$
 $100x = 2400$
 $x = 24$

42. $16 = (x\%)(84)$

$\frac{16}{84} = x\%$

$x\% \approx 0.190476$

$x \approx 19.048\%$

43. $84 = x\%(16)$

$\frac{84}{16} = x\%$

$x\% = 5.25 = 525\%$

41. $.05x = 32$

$x = \frac{32}{.05} = 640$

44. $x = .035(180)$

$x = 6.3$

45. $.035(x) = 180$

$x = \frac{180}{.035} \approx 5142.857$

46. $.15x = 64$

$x = \frac{64}{.15} \approx 426.667$

OR $x = 426.6$

47. $x = .15(64)$

$x = 9.6$

48. $\frac{18}{180} = \frac{x\%}{180}$

$\frac{1}{10} = x\%$

$x\% = 0.10$

$x = 10\%$

49. $x = .18(180)$

$x = 32.4$

50. $\frac{180}{18} = \frac{x\%(18)}{18}$

$10 = x\%$

$x = 1000\%$

51. Original Cost: \$80

Less 50% = 40

\$40

(10% off means 60% ON) $x = .6$
 $\$24$

NOT a 90% reduction!

90% off means 10% ON!

$\$80 \times .10 = \8