

# ARE YOU READY FOR MTH 60?

Below are some of the skills you should have BEFORE entering MTH 60.

Do not use a calculator.

1)  $5 - 3(5 + 3 * 3^2) =$

2)  $2 + \frac{4+3*2}{2} =$

3)  $-3 + 2 + \sqrt{36} - 2^3 =$

4)  $\frac{1}{4} + \frac{1}{6} - \left(\frac{2}{3}\right) =$

5)  $1.6(3) - .12 =$

6) Solve for x:  $\frac{7}{9} = \frac{10}{x}$

7)  $2\frac{3}{5} - \frac{7}{10} =$

8)  $\frac{5}{8} \div \left(-\frac{5}{4}\right) =$

9) Write 15% as a fraction (lowest terms) and a decimal

- 10) What number is 35% of 60?
- 11) Write the prime factorization of 24 using exponents.
- 12) Find the sale price for a \$85 sweater that is 30% off.
- 13) If a car travels at 55 miles per hour, how long will it take to drive 300 miles?
- 14) This week the sale price of a car is \$8000. Last week it was \$10000. What is the percent of decrease?
- 15) Jane finds five cool rocks on the beach every 50 hours she looks. About how many rocks would she find if she walked a total of 40 hours?

# SOLUTIONS

RU Ready  
4 MTH60?

$$\begin{aligned} \textcircled{1} \quad & 5 - 3(5 + 3 \cdot 3^2) \\ & 5 - 3(5 + 3 \cdot 9) \\ & 5 - 3(5 + 27) \\ & 5 - 3(32) \\ & 5 - 96 \\ & \boxed{-91} \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad & 2 + \frac{4 + 3 \cdot 2}{2} \\ & 2 + \frac{4 + 6}{2} \\ & 2 + \frac{10}{2} \\ & 2 + 5 = \boxed{7} \end{aligned}$$

$$\begin{aligned} \textcircled{3} \quad & -3 + 2 + \sqrt{36} - 2^3 \\ & -3 + 2 + 6 - 8 \\ & \boxed{-3} \end{aligned}$$

$$\begin{aligned} \textcircled{4} \quad & \frac{1^{x^3}}{4^{x^3}} + \frac{1^{x^2}}{6^{x^2}} - \frac{2^{x^4}}{3^{x^4}} \\ & \frac{3}{12} + \frac{2}{12} - \frac{8}{12} = \frac{-3}{12} = \boxed{\frac{-1}{4}} \end{aligned}$$

$$\begin{aligned} \textcircled{5} \quad & 1.6(3) - .12 \\ & \begin{array}{r} 1.6 \\ \times 3 \\ \hline 4.8 \end{array} \quad \begin{array}{r} 7 \\ 4.8 \overset{7}{0} \\ - .12 \\ \hline 4.68 \end{array} \\ & \boxed{4.68} \end{aligned}$$

$$\begin{aligned} \textcircled{6} \quad & \frac{7}{9} \neq \frac{10}{x} \\ & 7x = 90 \\ & \boxed{x = \frac{90}{7} \text{ or } 12\frac{6}{7}} \end{aligned}$$

$$\begin{aligned} \textcircled{7} \quad & 2\frac{3^{x^2}}{5^{x^2}} - \frac{7}{10} \\ & 2\frac{6}{10} - \frac{7}{10} \\ & \frac{26}{10} - \frac{7}{10} = \boxed{\frac{19}{10} \text{ or } 1\frac{9}{10}} \end{aligned}$$

$$\begin{aligned} \textcircled{8} \quad & \frac{5}{8} \div \left(\frac{-5}{4}\right) \\ & \frac{5}{8} \cdot \left(\frac{-4}{5}\right) = \boxed{\frac{-1}{2}} \end{aligned}$$

$$\begin{aligned} \textcircled{9} \quad & 15\% = \frac{15 \div 5}{100 \div 5} = \boxed{\frac{3}{20}} \\ & 15\% = \boxed{.15} \end{aligned}$$

# SOLUTIONS

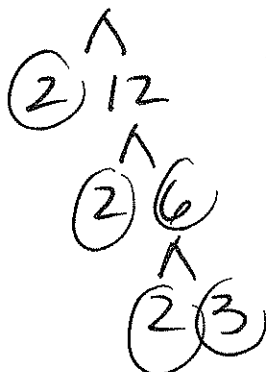
⑩ 35% of 60

$$(.35)(60)$$

$$\begin{array}{r} .35 \\ \times 60 \\ \hline 21.00 \end{array}$$

$$= 21$$

⑪ 24



$$2^3 \times 3$$

⑫ \$85, 30% off

$$85 - 30\% \text{ of } 85$$

$$85 - (.3)(85)$$

$$85 - 25.50$$

$$\boxed{\$59.50}$$

OR 85 (70%)

$$85$$

$$\times .7$$

$$\hline 59.5$$

OR

$$\boxed{\$59.50}$$

$$\begin{array}{r} 85 \\ .3 \\ \hline 25.5 \\ 74 \\ \hline 85.00 \\ -25.50 \\ \hline 59.50 \end{array}$$

⑬ 55 mph / 300 miles?

$$\frac{55 \text{ mi}}{1 \text{ hr}} = \frac{300 \text{ mi}}{x \text{ hr?}}$$

$$\frac{300}{55} = \frac{55x}{55}$$

$$\boxed{X = 5\frac{5}{11} \text{ hrs.}}$$

(about 5 1/2 hrs)

$$\begin{array}{r} 5\frac{25}{55} \\ 55 \overline{) 300} \\ \underline{275} \\ 25 \end{array}$$

⑭ 10,000  
- 8,000

DOWN 2000  
used to be 10,000

$$\frac{2000}{10,000} = \frac{1}{5} = \boxed{20\% \text{ decrease}}$$

⑮  $\frac{5}{50} = \frac{X}{40}$

$$200 = 50X$$

$$\boxed{X = 4}$$