

Answer Key for Pre-Algebra Test

I) Whole numbers.

1) 526

2) 343,574

3)

$$\begin{array}{r} 1543 \\ 27 \overline{)41661} \\ \underline{27} \\ 146 \\ \underline{135} \\ 116 \\ \underline{108} \\ 81 \\ \underline{81} \\ 0 \end{array}$$

4)

To average, add the values then divide by the number of values presented.

$$\frac{65 + 72 + 88 + \text{the fourth score}}{4} = 80$$

$$225 + \text{the fourth score} = 320$$

$$\text{the fourth score} = 95$$

5)

Use a proportion to solve this one !

$$\begin{array}{l} \text{length} \gg \frac{70}{84} = \frac{110}{x} \\ \text{weight} \gg \end{array}$$

$$84 \times 110 \div 70 = 132 \text{ pounds}$$

II) Decimals.

1) 19.818

2) 9.24

3) 0.03253

4)

$$\begin{array}{r} 0.33 \overline{) 33 \overline{) 60.00}} \\ \underline{33} \\ 60 \\ \underline{33} \\ 27 \\ \underline{26} \\ 60 \\ \underline{33} \\ 27 \end{array}$$

move decimal of divisor to far right, move decimal of dividend the same number of places, divide until remainder is zero or pattern develops

5) 12.6

6) $89,000 \div 1,000 = 89.6$

$$89.6 \times 6.23 = \$558.21$$

7)

52 hours = 40 hours at regular wage + 12 hours at time and a half
40 hours at regular wage = $40 \times 13.78 = \$551.20$
12 hours at time and a half = $12 \times (13.78 \times 1.5) = \248.04
total wage = $551.20 + 248.04 = \$799.24$

III) Skills needed in working with fractions.

1) $2^3 \times 3 \times 5 \times 7$

IV) Fractions.

1)

$$8 \frac{9}{40}$$

2) $7/24$

3)

$$\frac{9}{2} \text{ or } 4 \frac{1}{2}$$

4)

$$\frac{20}{7} \text{ or } 2 \frac{6}{7}$$

5)

$$\begin{aligned} \text{distance} &= \text{rate} \times \text{time} \\ 50 \times 6 \frac{1}{2} &= 325 \text{ miles} \end{aligned}$$

6)

$$\frac{4}{5} \times 1250 = 1000$$

V) Fractions, decimals and percents.

1) a) 4.6

b) 0.6666...

c) 0.753

2) 570 566 566.2 566.18

3) 1.5% commission = $0.015 \times 20,000 = \$300$

3% commission on sales over \$20,000 = $0.03 \times 25,280 = \$758.40$

Total commission = $300 + 758.40 = \$1058.40$

4) area = $4 \times 5 = 20$ square yards

discount = $0.40 \times 16.90 = \$6.76$

sale price = $16.90 - 6.76 = \$10.14$ per square yard

total cost = $10.14 \times 20 = \$202.80$

5)

$$\text{amount of discount} = 13,450 - 11,567 = \$1883$$

$$\frac{\%}{100} = \frac{\text{discount}}{\text{original price}}$$

$$\frac{x}{100} = \frac{1883}{13450} \qquad 14\%$$

- 6) down payment = $0.10 \times 728.50 = \$72.85$
- amount still owed = $728.50 - 72.85 = \$655.65$
- simple interest = principal X rate X time in years
- simple interest = $655.65 \times 0.16 \times 1.5 = \157.36
- total owed = $655.65 + 157.36 = \$813.01$
- payments = $813.01 \div 18 = \$45.17$

VI) Measurement.

- 1) fencing needed = $(62 \text{ yd} + 105 \text{ ft}) \times 2 =$
- $$(62 \text{ yd} + 35 \text{ yd}) \times 2 =$$
- $$97 \text{ yd} \times 2 = 194 \text{ yd}$$

cost = $194 \times 3.20 = \$620.80$

2)

$$\frac{3 \text{ furlongs}}{50 \text{ seconds}} \times \frac{1 \text{ mile}}{8 \text{ furlongs}} \times \frac{60 \text{ seconds}}{1 \text{ minute}} \times \frac{60 \text{ minutes}}{1 \text{ hour}} = 27 \text{ mph}$$

VII) Order of operations.

- 1) 4
- 2) 24

VIII) Scientific notation.

- 1) 2×10^{-4}
- 2) 5×10^7

IX) Integers.

addition	signs the same >> add numbers, keep sign signs different >> subtract numbers, keep sign of the larger (by absolute value)
subtraction	change sign to right of negative use addition rules
multiplication or division	signs the same >> positive answer signs different >> negative answer
order of operations still applies	

1) -33

2) -30

3) 6

4) 7

X) Algebraic skills.

1)

a) $x = -1$

b) $x = 6$

c) $x = -4$

2) 21

3) $7x$

4)

