It is important that employees demonstrate that they have basic problem solving skills. The purpose of the Arithmetic Computation Test is to provide the company with objective information about future apprentices to ensure they will be successful on the job and in apprentice training.

This Study Guide for the ACT is provided to you so that you may have an opportunity to review the types of problems you will be facing in the formal test. The problems in this Study Guide correspond to the problems in the ACT, but are more lengthy and difficult. When you are proficient in working the problems in this Study Guide, the formal ACT should not be difficult for you.

Do not use a calculator to help you solve these problems as none will be provided to you on the real exam. It is important that you be able to demonstrate your problem-solving ability without the use of a calculator.

The answers to the questions in this study guide are provided. Try to answer each questions first before looking at the answer. Be sure to show your work as you will be asked to do this on the formal exam.

A list of books and references to help you prepare for the ACT is attached. These reference supplements should help you in completing the problems ahead. Good luck!
The original textbook, *Refresher Arithmetic* by Edwin I. Stein and published by Allyn & Bacon had been recommended for test preparation in the ACT Study Form for several years.

In the event this book cannot be located, the following is a list of more recent text books which are generally available at any local bookstore (e.g. Barnes & Nobles, Borders, Stacey's Books, etc.) that may help employees prepare for the ACT:

1. **Arithmetic: The Easy Way, 3rd Edition** by Edward Williams & Katie Prindle. Published by Barron's Educational Series, 1996


When used in conjunction with the company provided ACT Study Form, these self-paced books can act as an excellent refresher to supplement an employee's existing mathematical skills.
1) Subtract 269,418 from 350,000. Then subtract 813 from 700,000. Then subtract 1,759,268 from 2,326,431. Then add all the remainders together.

**ANSWER:** 1,346,932

\[
\begin{align*}
350,000 - 269,418 &= 80,582 \\
700,000 - 813 &= 699,187 \\
2,326,431 - 1,759,268 &= 567,163 \\
80,582 + 699,187 + 567,163 &= 1,346,932
\end{align*}
\]
2) Round off each number to the nearest hundred thousand and then add the rounded numbers:

\[
\begin{array}{cccccc}
3,269,486 & 10,491,063 & 2,467,852 & 891,432 & 651,026 \\
14,346,413 & 6,050,983 & 26,053 \\
\end{array}
\]

\[
\begin{array}{cccccc}
3,300,000 & 10,500,000 & 2,500,000 & 900,000 & 700,000 \\
14,300,000 & 6,100,000 & & & \\
0 & & & & & \\
38,300,000 & & & & & \\
\end{array}
\]

\textit{ANSWER: 38,300,000}
3) Round off each number to the nearest tenth and then add the rounded numbers:

\[ .27 \quad 3.6153 \quad 14 \quad .0027 \quad 1.6531 \quad 5.423 \]
\[ .16 \quad 4 \]

\textit{ANSWER: 29.2}

\[ .3 + 3.6 + 14.0 + 0 + 1.7 + 5.4 + .2 + 4.0 = 29.2 \]
4) Add the following decimal numbers (change the words to numbers and then add the numbers.):

a) Three hundred twenty-seven thousand, one hundred three and six tenths.

b) Four thousand six and seven thousandths.

c) Twenty-six.

d) Six hundred and seven hundredths.

e) Twenty-six thousand, four hundred ninety-one and one tenth.

f) Fifty-seven and eighty-four thousandths.

**ANSWER:**  358,283.861

\[
327,103.6 + 4,006.007 + 26. + 600.07 + 26,491.1 + 57.084 = 358,283.861
\]
5) Multiply 3,040 by 904. Then multiply 687 by 394. Then add the products together.

**Answer:** 3,018,838

\[3,040 \times 904 = 2,748,160\]

\[687 \times 394 = 270,678\]

\[2,748,160 + 270,678 = 3,018,838\]
6) Divide 14,178 by 286. Then divide 69,418 by 286. Write each answer showing the remainder as a fraction of the divisor and then add the answers together. Reduce the results to the lowest terms.

\[
\begin{align*}
\text{ANSWER: } & \quad 292 \quad \frac{42}{143} \\
49 & \quad 164 \quad \frac{164}{286} \\
& \quad \underline{286} \text{ ) } 14178 \\
242 & \quad 206 \quad \frac{206}{286} \\
& \quad \underline{286} \text{ ) } 69418 \\
\end{align*}
\]

\[
\begin{align*}
\text{ANSWER: } & \quad 292 \quad \frac{42}{143} \\
49 & \quad 164 \quad \frac{164}{286} \\
+ 242 & \quad 206 \quad \frac{206}{286} \\
\underline{291} & \quad 370 \quad \frac{370}{286} = 292 \quad \frac{84}{286} = 292 \quad \frac{42}{143} \\
\end{align*}
\]
7) Add: 24,987  9  17.38  206  41,008 3 4

6.81  4  1/2

**ANSWER:** 66,239.44

\[
24,987 + 9 + 17.38 + 206 + 41,008.75 + 6.81 + 4.5 = 66,239.44
\]
8) Subtract \(12 \frac{3}{4}\) from \(26 \frac{1}{3}\). Then subtract \(2 \frac{2}{3}\) from the result. Reduce the answer to the lowest terms.

\[
\text{ANSWER: } 10 \frac{11}{12}
\]

\[
26 \frac{1}{3} = 26 \frac{4}{12} = 25 \frac{16}{12}
\]

\[
12 \frac{3}{4} = 12 \frac{9}{12}
\]

\[
25 \frac{16}{12} - 12 \frac{9}{12} = 13 \frac{7}{12} = 12 \frac{19}{12}
\]

\[
2 \frac{2}{3} = 2 \frac{8}{12}
\]

\[
12 \frac{19}{12} - 2 \frac{8}{12} = 10 \frac{11}{12}
\]
9) Add: $\sqrt{81}$, $6^2$, $\sqrt{25}$, $8^2$, $3^2$, $\sqrt{49}$.

Use positive roots only.

\[9 + 36 + 5 + 64 + 9 + 7 = 130\]

\textit{Answer: 130}
10) In the following pairs of fractions, decide which of the two fractions is the larger number. Select the larger number from each pair and add these three numbers. Reduce the answer to the lowest terms.

a) $\frac{5}{6}$ or $\frac{9}{11}$  

b) $\frac{11}{16}$ or $\frac{2}{3}$  

c) $\frac{7}{12}$ or $\frac{5}{8}$  

**ANSWER:** 2 $\frac{7}{48}$  

a) 

$\frac{5}{6} = \frac{55}{66}$  

$\frac{9}{11} = \frac{54}{66}$  

b) 

$\frac{11}{16} = \frac{33}{48}$  

$\frac{2}{3} = \frac{32}{48}$  

c) 

$\frac{7}{12} = \frac{14}{24}$  

$\frac{5}{8} = \frac{15}{24}$  

$\frac{5}{6} + \frac{11}{16} + \frac{5}{8} = \frac{40}{48} + \frac{33}{48} + \frac{30}{48} = \frac{103}{48}$  

lowest terms = 2 $\frac{7}{48}$
11) Find the product of: \( \frac{9}{5} \times \frac{3}{8} \times \frac{1}{3} \times \frac{2}{5} = \frac{48}{5} \times \frac{25}{3} \times \frac{21}{8} = 2 \times 5 \times 21 = 210 \)

**ANSWER:** 210
12) Add: \( \frac{3}{10} \), \( \frac{5}{6} \), and \( \frac{1}{2} \). Reduce to the lowest terms.

\[
\begin{align*}
2 \cdot \frac{3}{10} &= 2 \cdot \frac{9}{30} \\
16 \cdot \frac{5}{6} &= 16 \cdot \frac{25}{30} \\
7 \cdot \frac{1}{2} &= 7 \cdot \frac{15}{30} \\
\end{align*}
\]

\[
\begin{align*}
2 \cdot \frac{9}{30} + 16 \cdot \frac{25}{30} + 7 \cdot \frac{15}{30} &= 26 \cdot \frac{19}{30}
\end{align*}
\]

\textit{Answer: 26 \( \frac{19}{30} \)}
13) Add: \( \frac{5}{8} \), \( \frac{2}{3} \), \( \frac{7}{12} \). Reduce to the lowest terms.

\[ 4 \frac{5}{8} + 26 \frac{2}{3} + 13 \frac{7}{12} = 4 \frac{15}{24} + 26 \frac{16}{24} + 13 \frac{14}{24} = \frac{43}{24} = 44 \frac{7}{8} \]

\textbf{ANSWER:} \( 44 \frac{7}{8} \)
14) Divide \( 4 \frac{3}{8} \) by \( 11 \frac{1}{4} \). Then divide \( 16 \frac{1}{3} \) by \( 42 \). Then add the two results together and reduce to the lowest terms. Perform all operations with fractions.

**ANSWER:** \( \frac{7}{9} \)

\[
4 \frac{3}{8} \div 11 \frac{1}{4} = \frac{35}{8} \div \frac{45}{4} = \frac{35}{8} \times \frac{4}{45} = \frac{7}{18}
\]

\[
16 \frac{1}{3} \div 42 = \frac{49}{3} \div 42 = \frac{49}{3} \times \frac{1}{42} = \frac{7}{18}
\]

\[
\frac{7}{18} + \frac{7}{18} = \frac{14}{18} = \frac{7}{9}
\]
15) Find each of the following numbers and then add the resulting numbers together:

11 is \( \frac{3}{8} \) of what number?

8 is \( \frac{3}{5} \) of what number?

7 is \( \frac{3}{4} \) of what number?

**ANSWER: 52**

\[
11 \div \frac{3}{8} = 11 \times \frac{8}{3} = \frac{88}{3} = 29 \frac{1}{3}
\]

\[
8 \div \frac{3}{5} = 8 \times \frac{5}{3} = \frac{40}{3} = 13 \frac{1}{3}
\]

\[
7 \div \frac{3}{4} = 7 \times \frac{4}{3} = \frac{28}{3} = 9 \frac{1}{3}
\]

\[
29 \frac{1}{3} + 13 \frac{1}{3} + 9 \frac{1}{3} = 52
\]
16) Subtract 0.087 from 14; then subtract 0.863 from 0.9; then subtract 4.32 from 8.6596; then add the results together.

**ANSWER:** 18.2896

\[
14.0 - 0.087 = 13.913 \\
0.900 - 0.863 = 0.037 \\
8.6596 - 4.3200 = 4.3396 \\
13.913 + 0.037 + 4.3396 = 18.2896
\]
Arrange the following numbers in order of size (from the smallest to the largest):

.465  .4053  .47  .046  4.5  .51  .583  .60  .5126  .0059  5.

ANSWERS:

(Smallest)  1.  .0059
  2.  .046
  3.  .4053
  4.  .465
  5.  .47
  6.  .51
  7.  .5126
  8.  .583
  9.  .60
  10.  4.5

(Largest)   11.  5.
18) Multiply 462 by .801; then multiply .03 by .009; and then multiply 4.61 by 3.15; and then add all the products together.

**ANSWER:** 384.58377

\[
\begin{align*}
462 \times 0.801 &= 370.062 \\
0.03 \times 0.009 &= 0.00027 \\
4.61 \times 3.15 &= 14.5215 \\
370.062 + 0.00027 + 14.5215 &= 384.58377
\end{align*}
\]
19) Divide **972** by **.0079**; then divide **79.86** by **9.61**. Find the answers correct to the nearest thousandths, and add them together.

**ANSWER: 123,046.285**
20) Change the following fractions to decimals, correct to the nearest thousandth, and add them together:

\[
\begin{align*}
4 & \quad 16 \quad 37 \\
9 & \quad 13 \quad 14 \\
12 & \quad 1 \quad 11 \\
4 & \quad 7 \quad 31 \\
6 & \quad 1 \quad 2 \\
\end{align*}
\]

**ANSWER:** 37.178
21) Change the following decimals to fractions and then add the resulting fractions:

.1875       .5625       .8125

\[ \frac{1875}{10000} = \frac{75}{400} = \frac{3}{16} \]

\[ \frac{5625}{10000} = \frac{225}{400} = \frac{9}{16} \]

\[ \frac{8125}{10000} = \frac{325}{400} = \frac{13}{16} \]

\[ \frac{3}{16} + \frac{9}{16} + \frac{13}{16} = \frac{25}{16} = 1 \frac{9}{16} \]

**ANSWER:** \( 1 \frac{9}{16} \)
22) Subtract \( \frac{2}{5} \) from 1.861; then subtract \( \frac{3}{8} \) from 1.217; then multiply 13.1 by \( \frac{1}{4} \); then divide .5 by \( \frac{1}{4} \); then add all the results together.

**ANSWER: 7.578**

\[
\begin{align*}
\frac{2}{5} &= .4 \\
1.861 - .4 &= 1.461 \\
\frac{3}{8} &= .375 \\
1.217 - .375 &= .842 \\
\frac{1}{4} &= .25 \\
13.1 \times .25 &= 3.275 \\
\frac{1}{4} &= .25 \\
\frac{2}{.25} &= 2.0 \\
1.461 + .842 + 3.275 + 2.0 &= 7.578
\end{align*}
\]
23) Change the following percentages into decimals and add the decimals:

16\% \quad 2.03\% \quad 94 \frac{1}{2}\% \quad 112 \frac{3}{4}\% \quad .8\% \quad 700\% \quad \frac{1}{2}\%

\textit{Answer:} 9.2658

16\% \quad .16
2.03\% \quad .0203
94 \frac{1}{2}\% \quad .945
112 \frac{3}{4}\% \quad 1.1275
.8\% \quad .008
700\% \quad 7.00
\frac{1}{2}\% \quad .005
9.2658
24) Express each of the following percentages as a common fraction or mixed number (all must be correct for credit):

a) 8%  
   \[ \text{ANSWER: } \frac{2}{25} \]

b) 37 \( \frac{1}{2} \)%  
   \[ \text{ANSWER: } \frac{3}{8} \]

c) 325%  
   \[ \text{ANSWER: } 3 \frac{1}{4} \]

d) 18 %  
   \[ \text{ANSWER: } \frac{9}{50} \]

e) 33 \( \frac{1}{3} \)%  
   \[ \text{ANSWER: } \frac{1}{3} \]

\[ 8\% = \frac{8}{100} = \frac{2}{25} \]

\[ 37 \frac{1}{2} \% = \frac{37.5}{100} = \frac{15}{40} = \frac{3}{8} \]

\[ 325\% = \frac{325}{100} = \frac{13}{4} = 3 \frac{1}{4} \]

\[ 18\% = \frac{18}{100} = \frac{9}{50} \]

\[ 33 \frac{1}{3} \% = \frac{33\frac{1}{3}}{100} = \frac{100}{300} = \frac{1}{3} \]
25) Express each of the following fractions and mixed numbers as percentages (all must be correct for credit):

a) \( \frac{7}{10} \)  
   \[ \text{ANSWER: } 70\% \]

b) \( \frac{14}{5} \)  
   \[ \text{ANSWER: } 280\% \]

c) \( 1 \frac{23}{50} \)  
   \[ \text{ANSWER: } 146\% \]

d) \( \frac{13}{13} \)  
   \[ \text{ANSWER: } 100\% \]

e) \( \frac{17}{400} \)  
   \[ \text{ANSWER: } 4.25\% \]

\[ \frac{7}{10} = .7 = 70\% \]

\[ \frac{14}{5} = 2 \frac{4}{5} = 2.8 = 280\% \]

\[ 1 \frac{23}{50} = 1.46 = 146\% \]

\[ \frac{13}{13} = 1 = 100\% \]

\[ \frac{17}{400} = .0425 = 4.25\% \]
26) Find 37% of 91; then find 3% of 820; then find \( \frac{1}{4} \)% of 11; and then add all these numbers together.

**ANSWER: 58.2975**

\[
91 \times 0.37 = 33.67 \quad 820 \times 0.03 = 24.60 \\
11 \times 0.0025 = 0.0275
\]

\[
33.67 + 24.60 + 0.0275 = 58.2975
\]
27) Find the following percentages (all must be correct for credit):

   a) 234 is what percent of 585? \hspace{1cm} \text{ANSWER: 40} \% \\

   b) 37 is what percent of 25? \hspace{1cm} \text{ANSWER: 148} \% \\

   c) 3 is what percent of 100? \hspace{1cm} \text{ANSWER: 3} \% \\

   \begin{align*}
   a) \quad & \frac{4}{585} \times 234.00 = 40\% \\
   b) \quad & \frac{1.48}{25} \times 37.00 = 148\% \\
   c) \quad & \frac{0.03}{100} \times 3.00 = 3\%
   \end{align*}
28) Find the following numbers and add them together:

128 is 32% of what number? 17 is 4% of what number? 4 is .8% of what number?

**ANSWER:** 1325
29) If given the formula: \( a = bc \), (Both must be correct for credit).

   a) What would be the formula for finding \( b \)?

   \[ b = \frac{a}{c} \]

   **ANSWER:** \[ b = \frac{a}{c} \]

   b) What would be the formula for finding \( c \)?

   \[ c = \frac{a}{b} \]

   **ANSWER:** \[ c = \frac{a}{b} \]
30) Add the following lengths. Give the answer in feet and inches in its simplest form.

\[
\begin{align*}
6 \text{ ft. 7 in.} & \quad 47 \text{ in.} & \quad 9 \text{ ft 11 in.} & \quad 13 \frac{3}{4} \text{ ft.} & \quad 18 \text{ ft.} & \quad 9 \frac{2}{3} \text{ ft.} \\
17 \text{ in.} & \\
\end{align*}
\]

**ANSWER:** 63 ft. 3 in.

\[
\begin{align*}
6' & \quad 7'' \\
0' & \quad 47'' \\
9' & \quad 11'' \\
13' & \quad 9'' \\
18' & \quad 0'' \\
9' & \quad 8'' \\
0' & \quad 17'' \\
55' & \quad 99'' \\
99'' & = 8' 3'' \\
55' & \\
+ & \quad 8' 3'' \\
63' & \quad 3'' \\
\end{align*}
\]
31) Change the following lengths to feet and inches and add:

14.6 ft.   12.3 ft.   21.7 ft.   9.4 ft.   11.9 ft.

You may use either fractions or decimals in expressing parts of inches.

**Answer:** 69 ft 10.8 in.

\[
\begin{align*}
12 \times 0.6 &= 7.2 \text{ in.} & 14' &= 7.2'' \\
12 \times 0.3 &= 3.6 \text{ in.} & 12' &= 3.6'' \\
12 \times 0.7 &= 8.4 \text{ in.} & 21' &= 8.4'' \\
12 \times 0.4 &= 4.8 \text{ in.} & 9' &= 4.8'' \\
12 \times 0.9 &= 10.8 \text{ in.} & + 11' &= 10.8'' \\
\end{align*}
\]

\[
\begin{align*}
67' &= 34.8'' & 34.8'' &= 2' 10.8'' \\
67' + 2' &= 10.8'' & 69' &= 10.8''
\end{align*}
\]
32) Change the following lengths to feet (and tenths of a foot) and then add:

17 ft. 9 in.  8 ft. 5 in.  19 ft. 11 in.  12 ft. 6 in.  6 ft. 2 in.

Be sure to round all decimals to tenths before adding.

**ANSWER:** 64.8 ft

\[
\frac{9}{12} = .75 \\
\frac{5}{12} = .4167 \\
\frac{11}{12} = .9167 \\
\frac{6}{12} = .5 \\
\frac{2}{12} = .166
\]

17.8’ + 8.4’ + 19.9’ + 12.5’ + 6.2’ = 64.8’
Find the length of time for each of the four periods and then add them for the total time: The first period is from 8:14 a.m. to 1:56 p.m.; the second period is from 10:24 a.m. to 4:36 p.m.; the third is from 11:06 a.m. to 5:18 p.m.; and the fourth is from 8:42 a.m. to 3:18 p.m.

**ANSWER:** 24 hrs. 42 min.
34) All the following must be correct for credit.

   a) In the formula \( w = \frac{xy}{z} \), what happens to the value of “w” when “y” is tripled?

   \[ \text{ANSWER: } W \text{ is tripled} \]

   b) What happens to the value of “w” when “z” is doubled?

   \[ \text{ANSWER: } W \text{ is cut in half} \]

   c) In the formula \( w = \frac{3xz}{2y} \), what happens to the value of “w” when “x” is doubled?

   \[ \text{ANSWER: } W \text{ is doubled} \]

   d) Given the formula in c), what happens to the value of “w” when “y” is multiplied by 4?

   \[ \text{ANSWER: } w \text{ is cut to } \frac{1}{4} \text{ of original value} \]
35) Add the following numbers:

\[
\begin{align*}
3.4 \times 10^4 & \quad 1.78 \times 1,000 & \quad 8.631 \times 10^4 & \quad .008 \times 1,000 \\
6.006 \times 10^5 & \quad 863 \times 100 & \quad 5.48761 \times 10^3 & \quad .0683 \times 100,000.
\end{align*}
\]

**ANSWER: 821,315.61**

\[
\begin{align*}
3.4 \times 10^4 &= 34,000. \\
1.78 \times 1000 &= 1,780. \\
8.631 \times 10^4 &= 86,310. \\
.008 \times 1000 &= 8. \\
6.006 \times 10^5 &= 600,600. \\
863 \times 100 &= 86,300. \\
5.48761 \times 10^3 &= 5,487.61 \\
.0683 \times 100,000 &= 6,830. \\
\end{align*}
\]
36) Find the following:

a) $12$ compared to $60$ is the same as $22$ compared to what number?

**ANSWER: 110**

b) The unknown number in (a) compared to $55$ is the same as $13$ compared to what number?

**ANSWER: 6 \frac{1}{2}**

c) The unknown number in (b) compared to $39$ is the same as what number compared to $54$?

**ANSWER: 9**

\[
simplify:
\]

\[
\frac{12}{60} = \frac{22}{a}
\]

\[
\frac{110}{55} = \frac{13}{b}
\]

\[
\frac{6 \frac{1}{2}}{39} = \frac{c}{54}
\]

\[
a = 110 \quad 12a = 1,320
\]

\[
b = 6 \frac{1}{2} \quad 110b = 715
\]

\[
c = 9 \quad 351 = 39c
\]
37) What is the total volume of all three of the following rectangular spaces? The first is 6 ft. 3 in. long, 4 ft. 6 in. wide, and 8 ft. 8 in. high. The second is 7 ft. long, 2 ft. 6 in. wide, and 9 ft. 3 in. high. The third is 5 ft. 2 in. long, 12 ft. wide, and 4 ft. 9 in. high.

**ANSWER:** \(700 \frac{1}{8} \text{ Cu. Ft.}\)

\[
\begin{align*}
\frac{6}{12} \times 4 \frac{6}{12} \times 8 \frac{1}{12} &= \frac{1}{4} \times 4 \frac{1}{2} \times 8 \frac{3}{4} = 243 \frac{3}{4} = 243 \frac{6}{8} \\
\frac{7}{4} \times \frac{9}{2} \times \frac{26}{3} &= \frac{975}{4} = 243 \frac{3}{4} \\
\frac{294}{2} &= 294 \frac{4}{8} \\
\downarrow \\
\frac{7}{12} \times \frac{6}{2} \times \frac{37}{4} &= \frac{1295}{8} = 161 \frac{7}{8} \\
\frac{698}{8} &= 700 \frac{1}{8} \\
\frac{5}{12} \times 12 \times 4 \frac{9}{12} &= \frac{5 \frac{1}{2} \times 12 \times 4 \frac{3}{4} = 294 \frac{1}{2}}
\end{align*}
\]
38) Find “a” in the following formulas, when \( b = 4, \ c = 2, \) and \( d = 3. \) Then add the four “a” numbers together.

\[
a = 2b + 4c + d
\]

\[
a = \frac{6bc}{d}
\]

\[
a = b \left( \frac{2d}{c} \right)
\]

\[
a = 10bcd
\]

**ANSWER: 287**

\[
a = 2(4) + 4(2) + 3 = 8 + 8 + 3 = 19
\]

\[
a = \frac{6(4)(2)}{3} = \frac{6(8)}{3} = \frac{48}{3} = 16
\]

\[
a = 4 \left( \frac{2(3)}{2} \right) = 4 \left( \frac{6}{2} \right) = 4(3) = 12
\]

\[
a = 10(4)(2)(3) = 10(24) = 240
\]

\[
19 + 16 + 12 + 240 = 287
\]
39) Write the following formulas (all must be correct for credit):

a) The circumference of a circle is equal to twice pi (\( \pi \)) times the radius.

   \[ C = 2 \pi r \]

b) The area of a circle is equal to pi (\( \pi \)) times the square of the radius (r).

   \[ A = \pi r^2 \]

c) The area of a triangle is equal to one half the product of the altitude and base.

   \[ A = \frac{1}{2} ab \]

d) The area of a rectangle is equal to the product of the altitude and the base.

   \[ A = ab \]
40) Simplify the following expressions and add them together:

\[
\begin{align*}
18 \times 12 \times 24 &= 144 \\
25 + 500 &= 25 \\
504 \times 10 &= 360 \\
33 \times 9 \times 14 &= 231 \\
30 + 6 &= 6 + 3 \\
\end{align*}
\]

\[
\begin{align*}
\frac{18 \times 12 \times 24}{144} &= 36 \\
\frac{25 + 500}{25} &= 21 \\
\frac{504 \times 10}{360} &= 14 \\
\frac{33 \times 9 \times 14}{231} &= 18 \\
\frac{30 + 6}{6 + 3} &= 4 \\
\end{align*}
\]

\[
36 + 21 + 18 + 14 + 4 = 93
\]

**ANSWER: 93**

END OF TEST