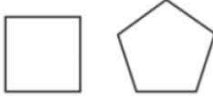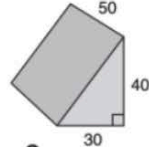# Shormann Algebra 1 Placement Test

Show your work on a separate piece of paper. No calculator allowed. Time Limit: 1 Hour

Adult supervision recommended.

1. Round 7.49362 to the nearest thousandth.

2. President Franklin D. Roosevelt died in office in 1945 at the age of 63. In what year was he born?

3. Eric ran 8 laps in 11 minutes 44 seconds. How many seconds did it take Eric to run 8 laps?

4. A one-quart container of oil costs 89¢. A case of 12 one-quart containers costs $8.64. How much is saved per container by buying the oil by the case?

5. Ricardo ran the 400-meter race 3 times. His fastest time was 54.3 seconds. His slowest time was 56.1 seconds. If his average time was 55.0 seconds, what was his time for the third race?

6. The perimeter of a square is one yard. What is the area of the square in square inches?

7. The perimeter of the square equals the perimeter of the regular pentagon. Each side of the pentagon is 16 cm long. How long is each side of the square?

8. Find the volume of the triangular prism shown. Dimensions are in millimeters.

9. The sale price of an item on sale for 40% off is $48. What was the regular price?

10. A bag contains 3 red marbles, 4 white marbles, and 5 blue marbles. If one marble is drawn from the bag, what is the probability that the marble will be blue?

11. $6w = 6^3$ Find w.

12. $4\frac{4}{5} \cdot 1\frac{1}{9} \cdot 1\frac{7}{8}$

13. $3\frac{5}{6} - \left(\frac{2}{3} - \frac{1}{2}\right)$

14. $(0.15)(0.05)$

15. $\frac{1.2}{4.4} = \frac{3}{a}$ Find a.

16. If $\frac{w}{x} = 3$, what does $\frac{x}{w}$ equal?

17. Write a fraction equal to $\frac{1}{2}$ with a denominator of 6 and a fraction equal to $\frac{1}{3}$ with a denominator of 6. Then add the fractions.

18. Evaluate $x^3 - xy - \frac{x}{y}$ if $x = 2$ and $y = 0.5$

19. Forty percent of what number is 60?

20. Only three-tenths of the print area of the newspaper carried news. The rest of the area was filled with advertisements. What percent of the print area was filled with advertisements?

Solutions Key
For Shormann Algebra 1 Placement Test

Grading: Use the solutions key below to grade the test. Each question is worth 5 points. No partial credit. Then, see the **Placement Guide** on the last page.

1. 7.49③62 - circle thousandths place
    7.494 - the number to the right is "5 or greater," so raise the circled number

2. 1945 – 63 = **1882**

3. 11 min + 44 seconds
    11 × 60 = 660 seconds
    $$\begin{array}{r} + 44 \\ \hline \textbf{704 seconds} \end{array}$$

4. $$\begin{array}{r} 0.72 \\ 12\overline{)8.64} \\ \underline{8\,4} \\ 24 \\ \underline{24} \\ 0 \end{array}$$
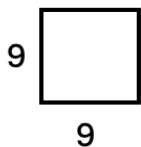
    ($0.72 each or $0.89 each?)
    0.89 – 0.72 = **$0.17 saved**

5. Find total seconds for all three races: Average x 3 = total sec.

    55.0 x 3 = 165 sec.

    $$\begin{array}{r} 54.3 \\ + 56.1 \\ \underline{N} \\ 165.0 \end{array} \qquad \begin{array}{r} 54.3 \\ + 56.1 \\ \hline 110.4 \end{array} \qquad \begin{array}{r} N = 165.0 \\ - 110.4 \\ \hline \textbf{54.6 seconds} \end{array}$$

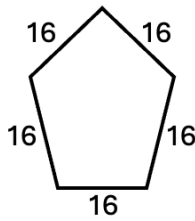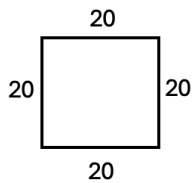6. Perimeter of a square is one yard, so $4\overline{)36}$ in. = 9 in

    9 ▢
     9

    A = 9 × 9 = **81 sq. inches**

7. $\mathrm{P}square = \mathrm{P}pentagon$
    $\mathrm{P}\text{square} = 80$
    $4\overline{)80} = \textbf{20 cm}$

$16 \times 5 = 80$

8. $V = A_B H$ (the base is a triangle)

$V = \dfrac{bh}{2} H$

$V = \dfrac{30 \bullet 40}{2} (50)$

$\textbf{V = 30,000 } mm^3$

9. If it is 40% off, the new price is 60% of full price.

WP • of = is

60% • C = 48

.6 C = 48

C = $80

Therefore, the Original Cost was $80.

10. 3 red
    4 white   probability of <u>blue</u> = $\dfrac{5}{12}$
    5 blue
    _____
    12 total marbles

11. $6w = 6^3$ $(6 \times 6 \times 6 = 216)$

$6w = 216$

w = 36

12. $4\frac{4}{5} \cdot 1\frac{1}{9} \cdot 1\frac{7}{8}$

$$\frac{\overset{\overset{1}{\cancel{3}}}{\cancel{24}}}{\cancel{5}} \cdot \frac{\overset{2}{\cancel{10}}}{\underset{3}{\cancel{9}}} \cdot \frac{\overset{5}{\cancel{15}}}{\cancel{8}} = \mathbf{10}$$

13. $3\frac{5}{6} - \left(\frac{2}{3} - \frac{1}{2}\right)$

$\frac{2}{3} = \frac{4}{6}$

$3\frac{5}{6} - \frac{1}{6}$

$-\frac{1}{2} = \frac{3}{6}$

$3\frac{5}{6}$ $\frac{1}{6}$

$-\frac{1}{6}$

$3\frac{4}{6} = \mathbf{3\frac{2}{3}}$

14. $(0.15)(0.05) \rightarrow$ 0.15

            0.05

            75 $\rightarrow$ 4 decimal places **0.0075**

15. $\frac{1.2}{4.4} = \frac{3}{a}$ cross multiply   1.2a = $\boxed{3(4.4)}$ 4.4

                                  $\times$ 3

                     1.2a = 13.2   13.2

$$1.2\overline{)13.2} \rightarrow \overset{\mathbf{11}}{12\overline{)132}}$$

                               12

                               12

                               12

                               0

16. $\frac{w}{x} = 3$ or $\frac{w}{x} = \frac{3}{1}$

What does $\frac{x}{w}$ equal? $\mathbf{\frac{1}{3}}$

17. $\dfrac{1}{2} = \dfrac{3}{6}$ $\dfrac{1}{3} = \dfrac{2}{6}$

$\dfrac{3}{6} + \dfrac{2}{6} = \dfrac{5}{6}$

18. $x^3 - xy - \dfrac{x}{y}$ $x = 2;$ $y = 0.5$

$(2)^3 - (2)(0.5) - \dfrac{(2)}{(0.5}$

$8 - 1 - 4 = 3$

19. 40% • WN = 60

0.4 • WN = 60

WN = $\dfrac{60}{0.4}$

$0.4\overline{)60.0} \rightarrow$

$\begin{array}{r} 150 \\ 4\overline{)600} \\ \underline{4} \\ 20 \\ \underline{20} \\ 0 \end{array}$

20.

$\dfrac{3}{10}$ = news

$\dfrac{7}{10}$ = ads
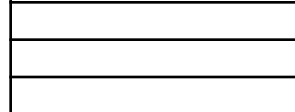
$\dfrac{7}{10} = \dfrac{70}{100} = 70\%$

Placement Guide

Scored 69 or Less

These students are **NOT READY** for Shormann Algebra 1. To determine correct placement, take the Shormann Pre-Algebra Placement Test.

Scored 70–79%

- **Struggling or Reluctant Math Student:** These students are **NOT READY** for Shormann Algebra 1. Take the Shormann Pre-Algebra Placement Test.

- **Good Math Student:** These students are ready for Algebra 1 with Integrated Geometry. However, this lower score indicates some gaps. While a strong math student can fill these during the first 25 lessons, some lessons may take more than 1 day. Please be sure to use the **The Timed Method**.

Scored 80% or Higher

The student is ready for Algebra 1 with Integrated Geometry.

Need Help? Contact A Placement Specialist