This assessment will help determine if this level of Math-U-See is a good place for your child to start. Each level of Math-U-See builds upon the concepts taught in previous levels. Successful placement involves finding the highest level your child has fully mastered and placing them one level above that.

1 Prior to beginning the assessment:

- Understand that the goal isn't to get all the questions correct. We are determining which concepts they have not yet mastered.
- Encourage your child and let them know that this is an assessment and NOT a test.
- Recognize they might already know some of the concepts taught in this level.
- Let your child know there may be questions they don't yet understand.
- Print the assessment and ensure you have a pencil and eraser.
- Your child may want extra paper to work through the questions.

2 Let your child know while taking the assessment:

- If they don't understand or can't do a question have them move to the next one.
- If they want to attempt a question but are not sure they understand it, have them mark it with a happy face.
- If they cannot answer 3 or more questions in a row, it is okay to stop doing this assessment.

3 Grading the assessment:

- A question that your child has marked with a happy face indicates to you that this concept is not completely understood and must be reviewed.
- For incorrect answers, ask your child how they arrived at their answer. If they understand the concept, they should be able to correct the mistake on their own. This is considered a computational error. For the sake of this assessment do not mark this as incorrect.
- If there are only one or two concepts they need to learn or review from a given level, it may be possible to just remediate those and start in the next level higher.

4 Analyzing the results:

Most answers are incorrect or have happy faces.	5 or more answers are incorrect or have happy faces.	Most answers are correct and there are no happy faces.
Have them try the assessment for **Zeta**	**Your child is ready for** **Pre-Algebra**	**Have them try the assessment for** **Algebra 1**

If you have questions after your child has taken the assessment, please contact us with the results and we will be able to help you determine the best level for them.

Pre-Algebra Placement Test

Follow the signs.

1. (−8) + (−25) =

2. (−7) x (−15) =

3. (11) − (−6) =

4. (−45) ÷ (9) =

Simplify.

5. -1^3 =

6. $-(5)^2$ =

7. $(-8)^2$ =

8. $\left(-\dfrac{2}{3}\right)^2$ =

Write in exponential notation.

9. 95.214

Write in decimal notation.

10. $1 \times 10^3 + 8 \times 10^2 + 2 \times 10^1 + 5 \times 10^0 + 6 \times \dfrac{1}{10^1}$ =

Simplify each expression.

11. $\sqrt{100}$ =

12. $\sqrt{Y^2}$ =

Simplify and solve for the unknown. Use order of operations as needed. Check your work.

13. $8 \cdot 2 + 5^2 - Y = 2(Y + 1) + 6$ 14. Check

15. $8M - 4M - 6 - 3 + 5M = 8^2 - 1$ 16. Check
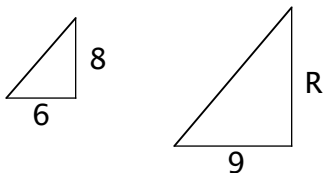
17. $(-3)^2 \div 9 + 6 = D$ 18. Check

Solve for the unknown.

19. $\dfrac{1}{8} = \dfrac{7}{Y}$ 20. $\dfrac{11}{12} = \dfrac{A}{48}$

Write a proportion for each set of similar polygons and solve for the unknown side.

21.

Find the LCM for each pair of numbers.

22. 3 and 4

23. 6 and 9

Find the GCF for each pair of numbers.

24. 24 and 40

25. 15 and 35

Add the polynomials.

26. $5X^2 + 4X + 2$
    $8X^2 + 3X - 4$

27. $7X^2 - X - 3$
    $6X^2 - 2X - 5$

28. $-4X^2 + 9X - 8$
    $2X^2 - 6X + 1$

29. What is the surface area of a rectangular solid with a length of seven inches, a width of five inches, and a height of six inches?

30. What is the surface area of a pyramid with a square base measuring 9 feet on a side if the slant height of each face is 11 feet?

31. The two legs of a right triangle measure 9 feet and 12 feet. What is the length of the hypotenuse of the triangle?
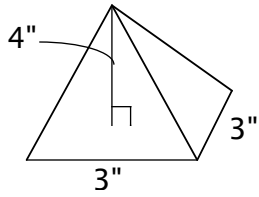
Multiply the binomials.

32. $$\begin{array}{r} 2X+1 \\ \times \ \ X+6 \\ \hline \end{array}$$

33. $$\begin{array}{r} X+7 \\ \times \ \ X+9 \\ \hline \end{array}$$

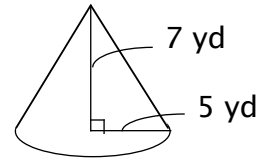34. $$\begin{array}{r} 2X+4 \\ \times \ \ X+5 \\ \hline \end{array}$$
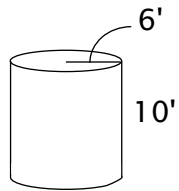
Find the volume. Round to hundredths.

35.

4"

3"

3"

36.

7 yd

5 yd

37.

6'

10'

Add or subtract the times.

38.   7:18
      − 3:05

39.   2:44
      + 1:59

40.   0136
      + 0438

Change to standard time.

41. 2120

42. 1611

43. 0345

Add or subtract the measurements.

44.
$$\begin{array}{r} 8'\ 3'' \\ -\ 5'\ 5'' \\ \hline \end{array}$$

45.
$$\begin{array}{r} 6\ \text{yd}\ 1\ \text{ft} \\ +\ 9\ \text{yd}\ 1\ \text{ft} \\ \hline \end{array}$$

46.
$$\begin{array}{r} 25\ \text{lb}\ \ 8\ \text{oz} \\ -\ 15\ \text{lb}\ 10\ \text{oz} \\ \hline \end{array}$$

Tell if the numbers are rational or irrational.

47. π

48. $\sqrt{25}$

1. $(-8)+(-25)=-33$
2. $(-7)\times(-15)=105$
3. $(11)-(-6)=$
   $(11)+(+6)=17$
4. $(-45)\div(9)=-5$
5. $-1^3=-(1)(1)(1)=-1$
6. $-(5)^2=-(5)(5)=-25$
7. $(-8)^2=(-8)(-8)=64$
8. $\left(-\dfrac{2}{3}\right)^2=\left(-\dfrac{2}{3}\right)\left(-\dfrac{2}{3}\right)=\dfrac{4}{9}$
9. $9\times10^1+5\times10^0+2\times\dfrac{1}{10^1}+1\times\dfrac{1}{10^2}+4\times\dfrac{1}{10^3}$
10. $1,825.6$
11. $\sqrt{100}=10$
12. $\sqrt{Y^2}=Y$
13.
$$8\cdot2+5^2-Y=2(Y+1)+6$$
$$8\cdot2+25-Y=2Y+2+6$$
$$16+25-Y=2Y+2+6$$
$$41-Y=2Y+8$$
$$-Y=2Y+8-41$$
$$-Y=2Y-33$$
$$-Y-2Y=-33$$
$$-3Y=-33$$
$$Y=11$$

14.
$$8\cdot2+5^2-Y=2(Y+1)+6\Rightarrow$$
$$8\cdot2+5^2-(11)=2((11)+1)+6$$
$$8\cdot2+5^2-11=2(12)+6$$
$$8\cdot2+25-11=2(12)+6$$
$$16+25-11=24+6$$
$$30=30$$

15.
$$8M - 4M - 6 - 3 + 5M = 8^2 - 1$$
$$8M - 4M - 6 - 3 + 5M = 64 - 1$$
$$9M - 9 = 63$$
$$9M = 63 + 9$$
$$9M = 72$$
$$M = 8$$

16. $8M - 4M - 6 - 3 + 5M = 8^2 - 1 \Rightarrow$
$$8(8) - 4(8) - 6 - 3 + 5(8) = 8^2 - 1$$
$$8(8) - 4(8) - 6 - 3 + 5(8) = 64 - 1$$
$$64 - 32 - 6 - 3 + 40 = 64 - 1$$
$$63 = 63$$

17.
$$(-3)^2 \div 9 + 6 = D$$
$$9 \div 9 + 6 = D$$
$$1 + 6 = D$$
$$D = 7$$

18. $(-3)^2 \div 9 + 6 = D \Rightarrow (-3)^2 \div 9 + 6 = (7)$
$$9 \div 9 + 6 = 7$$
$$1 + 6 = 7$$
$$7 = 7$$

19.
$$\frac{1}{8} = \frac{7}{Y}$$
$$1Y = 8(7)$$
$$Y = 56$$

20.
$$\frac{11}{12} = \frac{A}{48}$$
$$12A = 11(48)$$
$$12A = 528$$
$$A = 44$$

21.
$$\frac{R}{8} = \frac{9}{6}$$
$$6R = 8(9)$$
$$6R = 72$$
$$R = 12 \text{ units}$$

22. $3 = 1 \times 3; \ 4 = 2 \times 2$
$$LCM = 2 \times 2 \times 3 = 12$$

23. $6 = 2 \times 3; \ 9 = 3 \times 3$
$$LCM = 2 \times 3 \times 3 = 18$$

24. $24 = 2 \times 2 \times 2 \times 3; \ 40 = 2 \times 2 \times 2 \times 5$
$$GCF = 2 \times 2 \times 2 = 8$$

25. $15 = 3 \times 5; \ 35 = 5 \times 7$
$$GCF = 5$$

26.
$$5X^2 + 4X + 2$$
$$+ \quad 8X^2 + 3X - 4$$
$$13X^2 + 7X - 2$$

27.
$$7X^2 - X - 3$$
$$+ \quad 6X^2 - 2X - 5$$
$$13X^2 - 3X - 8$$

28.
$$-4X^2 + 9X - 8$$
$$+ \quad 2X^2 - 6X + 1$$
$$-2X^2 + 3X - 7$$

29.
$$2(7 \times 5) + 2(5 \times 6) + 2(6 \times 7) =$$
$$2(35) + 2(30) + 2(42) =$$
$$70 + 60 + 84 = 214 \text{ in}^2$$

30.
$$4\left(\frac{1}{2} \times 11 \times 9\right) + (9 \times 9) =$$
$$4(49.5) + (81) =$$
$$198 + 81 = 279 \text{ ft}^2$$

31.
$$9^2 + 12^2 = H^2$$
$$81 + 144 = H^2$$
$$225 = H^2$$
$$H = 15 \text{ ft}$$

32. $(2X + 1)(X + 6) = 2X^2 + 13X + 6$

33. $(X + 7)(X + 9) = X^2 + 16X + 63$

34. $(2X + 4)(X + 5) = 2X^2 + 14X + 20$

35. $V = \dfrac{1}{3}(3 \times 3)(4)$

$V = \dfrac{1}{3}(9)(4) = 12 \text{ in}^3$

36. $V = \dfrac{1}{3}(3.14)(5)^2(7)$

$V = \dfrac{1}{3}(3.14)(25)(7) \approx 183.17 \text{ yd}^3$

37. $V = (3.14)(6)^2(10)$

$V = (3.14)(36)(10) \approx 1{,}130.4 \text{ ft}^3$

38.
$$7:18$$
$$- \quad 3:05$$
$$4:13$$

39.

$$\begin{array}{r} 2:\ 44 \\ +\ \ 1:\ 59 \\ \hline 3:103 \end{array} \quad = 4:43$$

40.

$$\begin{array}{r} 0136 \\ +\ \ 0438 \\ \hline 0574 \end{array} \quad = 0614$$

41. $2120 - 12:00 = 9:20$ PM

42. $1611 - 12:00 = 4:11$ PM

43. $3:45$ AM

44.

$$\begin{array}{r} 8'3" + 7" = 8'10" \\ -\ \ 5'5" + 7" = 6'\ \ 0" \\ \hline 2'10" \end{array}$$

45.

$$\begin{array}{r} 6 \text{ yd } 1 \text{ ft} \\ +\ \ \ 9 \text{ yd } 1 \text{ ft} \\ \hline 15 \text{ yd } 2 \text{ ft} \end{array}$$

46.

$$\begin{array}{r} 25 \text{ lb }\ \ 8 \text{ oz} + 6 \text{ oz} = 25 \text{ lb } 14 \text{ oz} \\ -\ \ 15 \text{ lb } 10 \text{ oz} + 6 \text{ oz} = 16 \text{ lb }\ \ 0 \text{ oz} \\ \hline 9 \text{ lb } 14 \text{ oz} \end{array}$$

47. irrational

48. rational