Saint Michael School
Recommended Summer Math
(For students entering grades 6, 7, and 8)

Dear SMS Jr. High Parents, Guardians, and Students,

The 2020 summer math has been selected from the junior high Sadlier-Oxford Textbook Series online “Skills Update” sections.

Please complete only the pages for the grade for which you are entering in the fall.
Do ONLY the EVEN problems on each page.

Use notebook paper if you are accessing this work online and can’t print the pages out or if you need more space. Submit all work, including notebook pages, during the first week of school.

Try to spread out the work and not leave it all to the end of summer. Further help can be found at khanacademy.org if additional review of the content is needed.

The worksheets are available for download at school.saint-michael.com

If you have any questions about your summer assignment, please email:
lseeley@saint-michael.com.

Thank you and have a safe, enjoyable summer! I look forward to seeing you all in the fall!

Lauren Seeley
Jr. High Math

The following pages are all for Grade 8. Do the EVEN problems.

Name Do only the EVEN problems for all pages

Prime and Composite Numbers

Find all the factors for each number.
Write whether the number is prime or composite.

Remember:
A number is *prime* when it has exactly two factors, itself and 1.
A number is *composite* when it has more than two factors.
0 and 1 are neither prime nor composite.

1. 15

Composite

Factors of 15: 1,3,5,15

2. 30

Factors of 30:

3. 245

Composite

Factors of 245: 1,5, 7, 35, 49, 245,

4. 46

Factors of 46:

5. 181

Prime

Factors of 181: 1, 181

Not divisible by 2,3,4,5,6,7,…I checked lots of numbers.

6. 302

Factors of 302:

7. 49

Factors of 49:

8. 163

Factors of 163:

9. 12

Factors of 12:

10. 11

Factors of 11:

11. 23

Factors of 23:

12. 71

Factors of 71:

13. 125

Factors of 125:

14. List the first ten prime numbers:

Name _____

Add and Subtract Fractions

Add.

Remember:
Find the least common denominator (LCD) of the fractions.
Rename each fraction as an equivalent fraction with the LCD as the denominator.
Add. Express the sum in simplest form.

1. $\frac{4}{9} + \frac{3}{4} + \frac{1}{2}$

2. $\frac{1}{5} + \frac{12}{15} + \frac{1}{3}$

First find the LCM of 9, 4, and 2. That will be the LCD for the three fractions. (36)
Then change each fraction to an equivalent fraction using the LCD:
4/9 = 16/36 (times 4 on top and bottom)
3/4 = 27/36 (times 9 on top and bottom)
1/2 = 18/36 (times 18 on top and bottom)
Then add all of the numerators, and keep the denominator. Simplify if you can.

_____ _____

3. $\frac{1}{7} + \frac{2}{3} + \frac{6}{21}$

4. $\frac{5}{8} + \frac{9}{12} + \frac{2}{3}$

5. $\frac{11}{15} + \frac{7}{10} + \frac{1}{3}$

_____ _____ _____

6. $\frac{1}{9} + \frac{5}{6} + \frac{2}{3}$

7. $\frac{11}{20} + \frac{9}{10} + \frac{3}{4}$

8. $\frac{1}{7} + \frac{2}{5} + \frac{1}{10}$

_____ _____ _____

9. $\frac{7}{12} + \frac{1}{4} + \frac{5}{6}$

10. $\frac{13}{14} + \frac{3}{7} + \frac{1}{2}$

11. $\frac{5}{6} + \frac{15}{18} + \frac{8}{9}$

_____ _____ _____

Name _____

Subtract.

12. $\frac{3}{4} - \frac{2}{3}$

Just like addition on the previous page, you need to convert the fractions to equivalent fractions with a common denominator. Then subtract

9/12 - 8/12 = 1/12

_____

13. $\frac{4}{5} - \frac{1}{2}$

_____

Remember:
Find the least common denominator (LCD) of the fractions.
Rename each fraction as an equivalent fraction with the LCD as the denominator.
Subtract. Express the difference in simplest form.

14. $\frac{5}{12} - \frac{1}{6}$

_____

15. $\frac{1}{2} - \frac{1}{3}$

_____

16. $\frac{2}{3} - \frac{1}{5}$

_____

17. $\frac{7}{8} - \frac{1}{4}$

_____

18. $\frac{11}{13} - \frac{1}{2}$

_____

19. $\frac{4}{7} - \frac{1}{8}$

_____

20. $\frac{2}{5} - \frac{2}{7}$

_____

21. $\frac{1}{3} - \frac{1}{5}$

_____

22. $\frac{9}{10} - \frac{1}{5}$

_____

23. $\frac{1}{3} - \frac{1}{8}$

_____

24. $\frac{1}{2} - \frac{1}{4}$

_____

25. $\frac{6}{9} - \frac{1}{3}$

_____

Name _____

Multiply and Divide Fractions

Review these reminders:

Remember:
Multiply the numerators. Then multiply the denominators. Write the product in simplest form.

Multiply.

1. $\frac{3}{5} \times \frac{1}{3}$ _____
2. $\frac{2}{7} \times \frac{1}{2}$ _____
3. $\frac{11}{13} \times \frac{3}{5}$ _____
4. $\frac{1}{5} \times \frac{1}{8}$ _____
5. $\frac{3}{8} \times \frac{2}{3}$ _____
6. $\frac{3}{7} \times \frac{2}{3}$ _____
7. $\frac{4}{9} \times \frac{5}{6}$ _____
8. $\frac{1}{7} \times \frac{1}{7}$ _____
9. $\frac{8}{12} \times \frac{1}{3}$ _____
10. $\frac{4}{11} \times \frac{1}{2}$ _____
11. $\frac{2}{9} \times \frac{2}{3}$ _____
12. $\frac{1}{5} \times \frac{1}{4}$ _____
13. $\frac{1}{7} \times \frac{1}{8}$ _____
14. $\frac{1}{3} \times \frac{1}{4}$ _____

Remember:
Divide any numerator and denominator by the greatest common factor (GCF). Multiply the numerators. Then multiply the denominators. The product will be in simplest form.

Multiply using the greatest common factor (GCF).

Reduce first then multiply.

15. $\frac{\overset{1}{\cancel{2}}}{\underset{1}{\cancel{7}}} \times \frac{\overset{2}{\cancel{14}}}{\underset{5}{\cancel{15}}}$ 2/5
16. $\frac{\cancel{6}}{\cancel{10}} \times \frac{\cancel{2}}{\cancel{4}}$ _____
17. $\frac{1}{\cancel{8}} \times \frac{\cancel{2}}{5}$ _____
18. $\frac{1}{\cancel{15}} \times \frac{\cancel{5}}{8}$ _____
19. $\frac{1}{\cancel{12}} \times \frac{\cancel{4}}{5}$ _____
20. $\frac{\cancel{8}}{9} \times \frac{1}{\cancel{4}}$ _____
21. $\frac{\cancel{5}}{\cancel{10}} \times \frac{\cancel{2}}{4}$ _____
22. $\frac{\cancel{22}}{31} \times \frac{1}{\cancel{2}}$ _____
23. $\frac{4}{\cancel{10}} \times \frac{\cancel{2}}{3}$ _____
24. $\frac{\cancel{6}}{\cancel{14}} \times \frac{\cancel{7}}{\cancel{8}}$ _____
25. $\frac{\cancel{2}}{5} \times \frac{1}{\cancel{4}}$ _____
26. $\frac{4}{\cancel{9}} \times \frac{\cancel{3}}{5}$ _____
27. $\frac{\cancel{6}}{13} \times \frac{25}{\cancel{6}}$ _____
28. $\frac{\cancel{2}}{5} \times \frac{1}{\cancel{4}}$ _____

Name _____

Divide.

Keep, Change, Flip: Keep the first number the same, change the operation to multiplication, and flip the second fraction (It's reciprocal). Then multiply the fractions.

Remember:
Multiply by the reciprocal of the divisor. Simplify using the GCF, where possible. Then multiply the numerators and the denominators.
Rename the product as a whole or mixed number when needed.

29. $\frac{3}{8} \div \frac{3}{5}$

30. $\frac{1}{6} \div \frac{12}{13}$

31. $\frac{2}{4} \div \frac{3}{6}$

32. $\frac{2}{3} \div \frac{1}{6}$

33. $\frac{4}{5} \div \frac{12}{5}$

34. $\frac{2}{9} \div \frac{2}{8}$

35. $\frac{4}{9} \div \frac{5}{3}$

36. $\frac{15}{17} \div \frac{5}{1}$

37. $\frac{3}{8} \div \frac{15}{8}$

38. $\frac{6}{7} \div \frac{2}{3}$

39. $\frac{1}{9} \div \frac{5}{7}$

40. $\frac{5}{9} \div \frac{1}{5}$

41. $\frac{1}{2} \div \frac{7}{8}$

42. $\frac{6}{9} \div \frac{3}{2}$

43. $\frac{4}{7} \div \frac{8}{21}$

44. $\frac{3}{8} \div \frac{4}{16}$

45. $\frac{5}{6} \div \frac{10}{13}$

Name _____

Compare and Order Numbers (Decimals)

Use <, =, or > to compare the decimals.

1. 1.876 ◯ 1.097

2. 0.0019 ◯ 0.0019

3. 0.0456 ◯ 0.0765

4. 2.012 ◯ 3.0017

5. 0.5011 ◯ 0.0018

6. 0.0341 ◯ 0.0341

Use place value to order the decimals from greatest to least.

Read these reminders.

Remember:
Line up the decimal points.
Compare the digits in each place, starting with the greatest place value.

7. 0.6231; 0.6010; 1.003; 0.6229

_____

8. 0.0017; 0.0143; 1.0011; 0.0092

_____

9. 2.485; 2.472; 2.501; 1.982

_____

10. 0.0004; 0.001; 0.0002; 0.0019

_____

11. 0.0910; 0.0911; 0.0903; 0.097

_____

12. 1.0001; 0.0001; 0.001; 1.0010

_____

13. 3.012; 3.021; 0.301; 3.001

_____

14. 0.071; 0.017; 1.0007; 0.0077

_____

Use place value to order the decimals from least to greatest.

15. 0.034; 0.004; 0.013; 1.03

_____

16. 0.0096; 0.0006; 0.0069; 0.0908

_____

17. 5.008; 5.0012; 5.021; 0.508

_____

18. 1.1042; 1.0421; 1.004; 0.142

_____

19. 0.0007; 0.007; 0.701; 0.001

_____

20. 0.057; 0.007; 0.0012; 0.502

_____

21. 1.129; 1.921; 1.2109; 1.09

_____

22. 3.104; 3.001; 4.002; 3.401

_____

Name _____

Order of Operations with Integers

Compute.

Remember:
Order of Operations
1. ( ) before [ ]
2. exponents
3. "×" or "÷" left to right
4. "+" or "−" left to right

1. $24 - 3 \times 5 \div (-5) + 2^2$

Do just one operation per line using the "funnel method". Take your time to get it right.
Follow PEMDAS for order of operations

_____

2. $[21 + (4 \times 3)] \div 3$

_____

3. $42 \div 7 \times 2$

_____

4. $(11 - 4) \times 6 - 2 \times (-7 + 2)$

_____

5. $[31 + (3 \times 3)\,] \div (-8)$

_____

6. $54 \div 9 + 6 \times 4$

_____

7. $[52 - (2 \times 5)\,] \div 7$

_____

8. $(9 - 2) \times 7 - 1 \times (12 - 2)$

_____

9. $28 - 4 \times 4 \div 8 + (-2^3)$

_____

10. $(14 + 6) \div 5 + 9 \times (-11 + 6)$

_____

11. $[24 + (3 \times 8)\,] \div 6$

_____

12. $(33 - 18) \times 2 - 5 \times (18 - 9)$

_____

13. $-30 + 22 \times 3 \div 6 + (4^2)$

_____

Name _____

Compute.

14. $(24 + 1) \div 5 + 7 \times (11 - 9)$

15. $[-10 + (-6 \times 9)] \div 8$

Simplify.

16. $\dfrac{(14) + (-6)}{-8 - (-4)}$

Remember:
A fraction bar is also a grouping symbol. Do any computation above or below before simplifying.

17. $\dfrac{(2 + 3) - (5 + 6)}{7 + (-5)}$

Do PEMDAS on the numerator and denominator separately. Then simplify.

18. $\dfrac{21 \div (8 - 1)}{6 - 3}$

19. $\dfrac{(17 - 7) - (4 - 2)}{12 - 8}$

20. $\dfrac{(53) + (-9)}{14 - 3}$

21. $\dfrac{2^3 - (5-1)}{7 - 3}$

22. $\dfrac{3 \times (12 - 5)}{4 + 3}$

23. $\dfrac{(12 + 36) \div 6 - 2 \times (8 - 6)}{5^2 - (10 + 11)}$

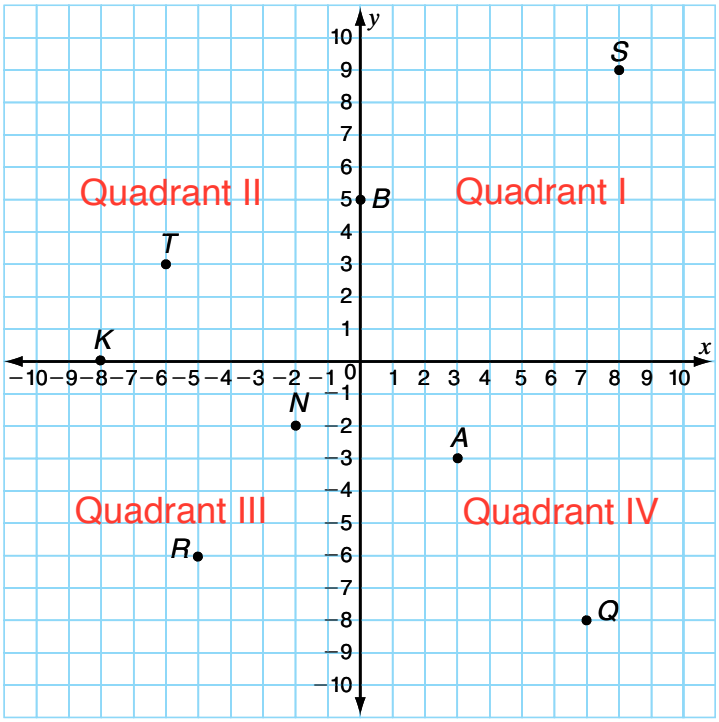
24. $\dfrac{[16 + (4 \times 6)] \div 5}{2(21 - 19)}$

25. $\dfrac{[56 - (6 \times 4)] \div (-8)}{(4^2) + (-22 + 15)}$

26. $\dfrac{2 \times 7 - [(16 \div 8) + 2]}{5(9 - 2^3)}$

Name _____

The Coordinate Plane



Remember:
A coordinate plane is formed by the *x*-axis and the *y*-axis. The point where the axes intersect is (0,0), called the origin.

Find the coordinates for each point.

1. *T* _____

2. *A* _____

3. *S* _____

4. *K* _____

5. *R* _____

6. *Q* _____

7. *B* _____

8. *N* _____

Locate the coordinates for each point on the grid above. Write the quadrant each lies within.

9. *E* (2, 1) Quadrant I

10. *C* (–5, 9) _____

11. *J* (–1, 6) Quadrant II

12. *G* (5, –4) _____

13. *U* (–9, –1) _____

14. *Z* (–9, –8) _____

15. *W* (8, 5) _____

16. *H* (2, –9) _____