

Take Home Assignment Answer Sheet

Lowest Common Multiple

$$1) \begin{array}{l} 3 \mid 3, 6, 9, 12, 15, 18, 21, \textcircled{24} \\ 24 \mid \textcircled{24}, 48 \end{array}$$

$$2) \begin{array}{l} 12 \mid \textcircled{12}, 24, 36 \\ 6 \mid 6, \textcircled{12}, 18, 24 \end{array}$$

$$3) \begin{array}{l} 8 \mid 8, 16, \textcircled{24}, 32 \\ 6 \mid 6, 12, 18, \textcircled{24} \end{array}$$

$$4) \begin{array}{l} 7 \mid 7, 14, 21, 28, \textcircled{35} \\ 5 \mid 5, 10, 15, 20, 25, 30, \textcircled{35} \end{array}$$

Converting Fractions Improper fractions to mixed numbers

$$1) \frac{29}{4} = 7\frac{1}{4}$$

$$2) \frac{13}{6} = 2\frac{1}{6}$$

$$3) \frac{73}{9} = 8\frac{1}{9}$$

$$4) \frac{65}{8} = 8\frac{1}{8}$$

$$5) \frac{17}{2} = 8\frac{1}{2}$$

$$5) \frac{5}{2} = 2\frac{1}{2}$$

Mixed number to Improper fraction

$$1) 7\frac{1}{3} = \frac{22}{3}$$

$$2) 7\frac{9}{10} = \frac{79}{10}$$

$$3) 7\frac{3}{4} = \frac{31}{4}$$

$$4) 2\frac{1}{2} = \frac{5}{2}$$

$$5) 8\frac{4}{7} = \frac{60}{7}$$

$$6) 2\frac{3}{5} = \frac{13}{5}$$

Adding and Subtracting Fractions

*Use LCM to find a common denominator if you need to !!

$$1) \frac{1^{x^3}}{2^{x^3}} - \frac{1^{x^2}}{3^{x^2}}$$

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

$$4) \frac{2^{x^5}}{6^{x^5}} - \frac{1^{x^3}}{10^{x^3}}$$

LCM
 $6 | 6, 12, 18, 24, 30$
 $10 | 10, 20, 30$

$$= \frac{10}{30} - \frac{3}{30}$$

$$= \frac{7}{30}$$

$$2) \frac{6^{x^3}}{7^{x^3}} + \frac{2^{x^7}}{3^{x^7}}$$

$$= \frac{18}{21} + \frac{14}{21}$$

$$= \frac{50}{21}$$

LCM
 $7 | 7, 14, 21$
 $3 | 3, 6, 9, 12, 15, 18, 21$

$$5) \frac{2^{x^5}}{8^{x^5}} + \frac{4^{x^1}}{5^{x^8}}$$

LCM
 $8 | 8, 16, 24, 32, 40$
 $5 | 5, 10, 15, 20, 25, 30, 35, 40$

$$= \frac{10}{40} + \frac{32}{40}$$

$$= \frac{42}{40} \div 2$$

$$= \frac{21}{20}$$

$$3) \frac{5}{9} - \frac{5}{9} = 0$$

This can be reduced

using GCF

$$6) \frac{5^{x^6}}{7^{x^6}} - \frac{3^{x^7}}{6^{x^7}}$$

$$= \frac{30}{42} - \frac{21}{42}$$

$$= \frac{9}{42} \div 3$$

$$= \frac{3}{14}$$

LCM
 $7 | 7, 14, 21, 28, 35, 42$
 $6 | 6, 12, 18, 24, 30, 36, 42$

GCF
 $\frac{9}{1 \times 9}$
 3×3

$\frac{42}{1 \times 42}$
 2×21
 3×14

Greatest Common Factor

$$1) \frac{32}{1 \times 32} = \frac{8}{1 \times 8}$$

$$2 \times 16$$

$$4 \times 8$$

$$2) \frac{75}{1 \times 75} = \frac{15}{1 \times 15}$$

$$3 \times 25$$

$$5 \times 15$$

$$3) \frac{9}{1 \times 9} = \frac{5}{1 \times 5}$$

$$3 \times 3$$

$$4) \frac{12}{1 \times 12} = \frac{48}{1 \times 48}$$

$$2 \times 6$$

$$3 \times 4$$

$$2 \times 24$$

$$3 \times 16$$

$$4 \times 12$$

$$6 \times 8$$

$$5) \frac{6}{1 \times 6} = \frac{8}{1 \times 8}$$

$$2 \times 3$$

$$2 \times 4$$

Reducing Fractions

* you can use divisibility rules or GCF

$$1) \frac{136 \div 8}{200 \div 8} = \frac{17}{25}$$

$$2) \frac{14 \div 7}{35 \div 7} = \frac{2}{5}$$

GCF

$$\frac{14}{1 \times 14}$$

$$2 \times 7$$

$$\frac{35}{1 \times 35}$$

$$5 \times 7$$

$$3) \frac{8 \div 8}{16 \div 8} = \frac{1}{2}$$

$$4) \frac{35 \div 5}{45 \div 5} = \frac{7}{9}$$

$$5) \frac{40 \div 8}{64 \div 8} = \frac{5}{8}$$

$$6) \frac{40 \div 40}{80 \div 40} = \frac{1}{2}$$

GCF

$$\frac{40}{1 \times 40}$$

$$2 \times 20$$

$$4 \times 10$$

$$5 \times 8$$

$$\frac{80}{1 \times 80}$$

$$2 \times 40$$

$$4 \times 20$$

$$5 \times 16$$

$$8 \times 10$$

Equivalent Fraction

1) $\frac{4^{x^7}}{10^{x^7}} = \frac{28}{70}$

2) $\frac{1}{2} = \frac{4}{8}$

3) $\frac{2}{3} = \frac{16}{27}$

4) $\frac{4}{6} = \frac{16}{24}$

5) $\frac{1}{8} = \frac{8}{64}$

6) $\frac{2}{4} = \frac{8}{16}$

Putting it All Together

use all your steps if you need to!

1) $\frac{16}{22} + \frac{8^{x^2}}{11^{x^2}}$
 $= \frac{16}{22} + \frac{16}{22}$
 $= \frac{32}{22} \div 2$
 $= \frac{16}{11}$

3) $\frac{18^{x^3}}{15^{x^3}} - \frac{24^{x^3}}{21^{x^3}}$
 $\frac{6^{x^7}}{5^{x^7}} - \frac{8^{x^5}}{7^{x^5}}$
 $\frac{42}{35} - \frac{40}{35}$
 $= \frac{2}{35}$

Sometimes its a good idea to reduce before if your numbers are big!

LCM
 5 | 5, 10, 15, 20, 25, 30, 35
 7 | 7, 14, 21, 28, 35

2) $\frac{26}{50} - \frac{56}{30}$

$\frac{2^{x^3}}{5^{x^3}} - \frac{5^{x^5}}{3^{x^5}}$
 LCM
 5 | 5, 10, 15
 3 | 3, 6, 9, 12, 15
 $\frac{6}{15} - \frac{25}{15}$
 $= -\frac{19}{15}$

4) $\frac{18}{24} + \frac{16^{x^4}}{6^{x^4}}$

$\frac{18}{24} + \frac{64}{24}$
 $= \frac{82}{24} \div 2$
 $= \frac{41}{12}$
 $= 3\frac{5}{12}$

GCF
 82
 1x82
 2x41
 24
 1x24
 2x12
 3x8
 4x6

(sorry this was a negative number)

5)

$$\frac{9^{\div 9}}{18^{\div 9}} + \frac{36^{\div 9}}{27^{\div 9}}$$

This is another example of when it would be good to reduce first

$$\frac{1^{\times 3}}{2^{\times 3}} + \frac{4^{\times 2}}{3^{\times 2}}$$

$$\frac{3}{6} + \frac{8}{6}$$

$$= \frac{11}{6}$$

Can't simplify anymore, because 11 is a prime number

6)

$$\frac{32^{\div 8}}{24^{\div 8}} + \frac{16^{\div 8}}{48^{\div 8}}$$

$$= \frac{4^{\times 2}}{3^{\times 2}} + \frac{2}{6}$$

$$= \frac{8}{6} + \frac{2}{6}$$

$$= \frac{10^{\div 2}}{6^{\div 2}}$$

$$= \frac{5}{3}$$

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