

MAT 105 Assessment of Readiness – Part 2
Algebraic Fractions

1) Reduce each algebraic fraction:

a) $\frac{12a^2b}{-8ac}$ b) $\frac{-20x^2y^2}{-90xy^2}$ c) $\frac{-32a^3b^3}{48a^3b^3}$ d) $\frac{5xy}{45x^2y^2}$ e) $\frac{x^2-9}{3x+9}$

2) Multiply each algebraic fraction:

a) $mn \cdot \frac{8}{m^2n^2}$ b) $\frac{24x}{35y} \cdot \frac{14y}{8x}$ c) $\frac{12x}{5y} \cdot \frac{15y^2}{36x^2}$ d) $\frac{6r^2}{5s^2} \cdot \frac{10rs}{6r^3}$

e) $\frac{30m^2}{18n} \cdot \frac{6n}{5m}$ f) $\frac{24a^3b^2}{7c^3} \cdot \frac{21c^2}{12ab}$ g) $\frac{5xy}{x^2y} \cdot \frac{xy^2}{25}$

3) Divide each algebraic fraction:

a) $\frac{3x}{5y} \div \frac{21x}{2y}$ b) $\frac{7ab^2}{10cd} \div \frac{14b^3}{5c^2d^2}$ c) $\frac{xy^2}{x^2y} \div \frac{x}{y^3}$ d) $\frac{6a^2b^2}{8c} \div 3ab$

e) $\frac{16c^3}{21d^2} \div \frac{24c^4}{14d^3}$ f) $24x^3y^2 \div \frac{36xy^2}{2y}$

4) Add or subtract each algebraic fraction:

Part 1

a) $\frac{2}{x} + \frac{3}{x}$ b) $\frac{11}{4c} + \frac{5}{4c} - \frac{6}{4c}$ c) $\frac{3x}{4} + \frac{2x}{4}$ d) $\frac{12y}{5} - \frac{4y}{5}$

e) $\frac{2c}{5} - \frac{3d}{5}$ f) $\frac{x}{2} - \frac{y}{2} + \frac{z}{2}$ g) $\frac{19c}{12d} + \frac{9c}{12d}$ h) $\frac{2x+6}{x+2} + \frac{3x+4}{x+2}$

i) $\frac{4x+12}{16x} + \frac{8x+4}{16x}$ j) $\frac{5x-4}{3} - \frac{2x+1}{3}$ k) $\frac{12a-15}{12a} - \frac{9a-6}{12a}$

Part 2

a) $\frac{x}{3} + \frac{x}{2}$ b) $\frac{d}{3} - \frac{d}{5}$ c) $\frac{5x}{6} - \frac{2x}{3}$ d) $\frac{y}{6} + \frac{y}{5} - \frac{y}{2}$

e) $\frac{ab}{5a} + \frac{ab}{4a}$ f) $\frac{8x}{5x} - \frac{3x}{4x} + \frac{7x}{10x}$ g) $\frac{5a}{6} - \frac{3a}{4}$ h) $\frac{a}{7} + \frac{b}{14a}$

i) $\frac{3x}{2} + \frac{x-4}{4x^2}$ j) $\frac{2}{x} + \frac{3x+2}{4}$ k) $\frac{a-3}{a} + \frac{2a+7}{6a}$

l) $\frac{3x}{2} + \frac{2x-1}{x+1}$ m) $\frac{3y-4}{y} + \frac{y-2}{y-1}$ n) $\frac{a-b}{4a} + \frac{a+b}{6b}$

ANSWERS - ALGEBRAIC FRACTIONS

1) a) $\frac{3ab}{-2c}$ b) $\frac{2x}{9}$ c) $\frac{-2}{3}$ d) $\frac{1}{9xy}$ e) $\frac{x-3}{3}$

2) a) $\frac{8}{mn}$ b) $\frac{6}{5}$ c) $\frac{y}{x}$ d) $\frac{2}{s}$ e) $2m$ f) $\frac{6a^2b}{c}$ g) $\frac{y^2}{5}$

3) a) $\frac{2}{35}$ b) $\frac{acd}{4b}$ c) $\frac{y^4}{x^2}$ d) $\frac{ab}{4c}$ e) $\frac{4d}{9c}$ f) $\frac{4x^2y}{3}$

4) Part 1

a) $\frac{5}{x}$ b) $\frac{5}{2c}$ c) $\frac{5x}{4}$ d) $\frac{8y}{5}$ e) $\frac{2c-3d}{5}$ f) $\frac{x-y+z}{2}$

g) $\frac{7c}{3d}$ h) 5 i) $\frac{3x+4}{4x}$ j) $\frac{3x-5}{3}$ k) $\frac{a-3}{4a}$

Part 2

a) $\frac{5x}{6}$ b) $\frac{2d}{15}$ c) $\frac{x}{6}$ d) $\frac{-2y}{15}$ e) $\frac{9b}{20}$ f) $\frac{31}{20}$

g) $\frac{a}{12}$ h) $\frac{2a^2+b}{14a}$ i) $\frac{6x^2+x-4}{4x^2}$ j) $\frac{3x^2+2x+8}{4x}$ k) $\frac{8a-11}{6a}$

l) $\frac{3x^2+7x-2}{2(x+1)}$ m) $\frac{4y^2-9y+4}{y(y-1)}$ n) $\frac{2a^2+5ab-3b^2}{12ab}$