

Test 1

1) B $(3^0)(3^{-2})(3^2) =$
 $(1)(\frac{1}{9})(9) = 1$

2) A $Y^8 \div Y^2 = Y^{(8-2)} = Y^6$

3) D $(3Q^2)^3 = (3)^3(Q)^{(2 \times 3)} = 27Q^6$

4) C $\frac{P^3N^{-2}}{N^2P^4} = P^{(3-4)}N^{(-2-2)} =$
 $P^{-1}N^{-4}$ or $\frac{1}{N^4P}$ (N and P $\neq$ 0)

5) A $3^{Y-1} = 81$
 $3^{Y-1} = 3^4$
 $Y - 1 = 4$
 $Y = 5$

6) C A: $0^5 = 0$
 B: $(-1)^5 = -1$
 C: $(?)^5 = 16$ (No whole number solution)
 D: $2^5 = 32$

7) A $A^2B^4 + B^3A = AB^3(AB + 1)$
 AB^3 is greatest common factor

8) D $P^2Q + P^4Q^2 = P^2Q(1 + P^2Q)$
 $1 + P^2Q$ is left

9) C $(-2 + 4)^{-2} = (2)^{-2} = \frac{1}{2^2} = \frac{1}{4}$

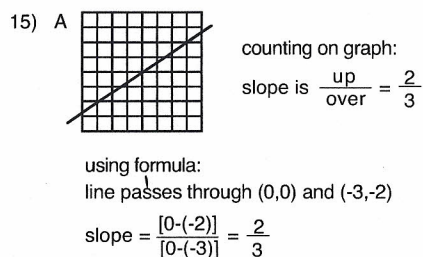
10) C $3^6 = 9^X$
 $(3^2)(3^2)(3^2) = 9^X$
 $(9)(9)(9) = 9^X$
 $(9)^3 = 9^X$
 $X = 3$

11) A $X + 2Y = 5$
 $(\frac{1}{2}Y) + 2Y = 5$
 $Y + 4Y = 10$
 $5Y = 10$
 $Y = 2$

12) B $4a = a + 6$
 $3a = 6$
 $a = 2$

13) B A straight line is 180°
 $180^\circ - 20^\circ = 160^\circ$
 $b + a = 160^\circ$

14) D $\frac{3}{7} = \frac{15}{X}$
 $3X = 105$
 $X = 35$
 35 cups of flour are needed



Test 2

1) C $\frac{5X+2}{5X} = \frac{5X}{5X} + \frac{2}{5X} =$
 $1 + \frac{2}{5X}$
 $(X \neq 0)$

2) C

3) D $\frac{2X}{X+2} - \frac{3X}{X-2} =$
 $\frac{2X(X-2)}{(X+2)(X-2)} - \frac{3X(X+2)}{(X+2)(X-2)} =$
 $\frac{(2X^2 - 4X) - (3X^2 + 6X)}{(X+2)(X-2)} =$
 $\frac{-X^2 - 10X}{(X+2)(X-2)} \quad (X \neq 2, -2)$

4) A $\frac{X^2+2X}{X} = \frac{X^2}{X} + \frac{2X}{X} = X + 2$
 $(X \neq 0)$

5) B $\frac{9}{4X} - \frac{5}{4Y} = \frac{9(Y)}{4X(Y)} - \frac{5(X)}{4Y(X)} =$
 $\frac{9Y - 5X}{4XY}$
 $(X, Y \neq 0)$

6) D $\frac{A}{A} + A^0 = 1 + 1 = 2$
 $(A \neq 0)$

7) B $\frac{18AB - 12A^2}{6A} = \frac{18AB}{6A} - \frac{12A^2}{6A} = 3B - 2A$
 $(X \neq 0)$

8) C

9) C $\frac{8Y}{X+1} + \frac{Y}{X-1} = \frac{8Y(X-1)}{(X+1)(X-1)} + \frac{Y(X+1)}{(X-1)(X+1)} =$
 $\frac{8XY - 8Y + XY + Y}{(X+1)(X-1)} = \frac{9XY - 7Y}{(X+1)(X-1)} \quad (X \neq 1, -1)$

10) A $\frac{2}{Y} + \frac{5}{3Y} - Y^{-1} =$

$\frac{2(3)}{Y(3)} + \frac{5}{3Y} - \frac{1(3)}{Y(3)} = \frac{6+5-3}{3Y} = \frac{8}{3Y}$
 $(Y \neq 0)$

11) D $X + 5 = 2X$
 $X = 5$

12) A $[(3^2)^{-3}]^{-1} = 3^{(2)(-3)(-1)} = 3^6$

13) D $-4^2 + 12 \div 4 - 16 - 8 \mid =$
 $-4^2 + 12 \div 4 - 1 - 2 \mid =$ Parentheses
 $-4^2 + 12 \div 4 - 2 =$
 $-16 + 12 \div 4 - 2 =$ Exponents
 $-16 + 3 - 2 =$ Multiplication and Division
 -15 Addition and Subtraction

14) D The area of a trapezoid is the average of the 2 bases times the height.
 $A = \left(\frac{3m+5m}{2}\right)m$
 $A = \left(\frac{8m}{2}\right)m = 4m^2$

15) B