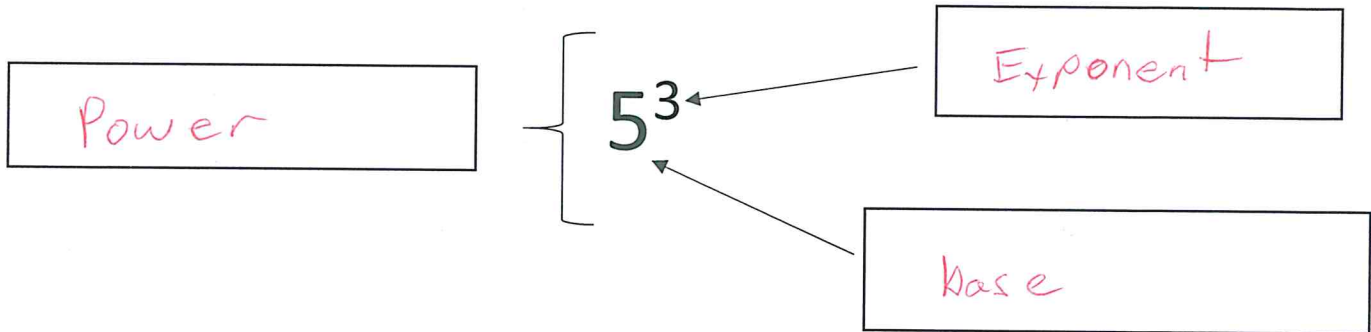


Grade 8 Math **Exponents and roots** Pre-Test

Name Key Class: _____ Date _____

1) Label the diagram. (3 marks)



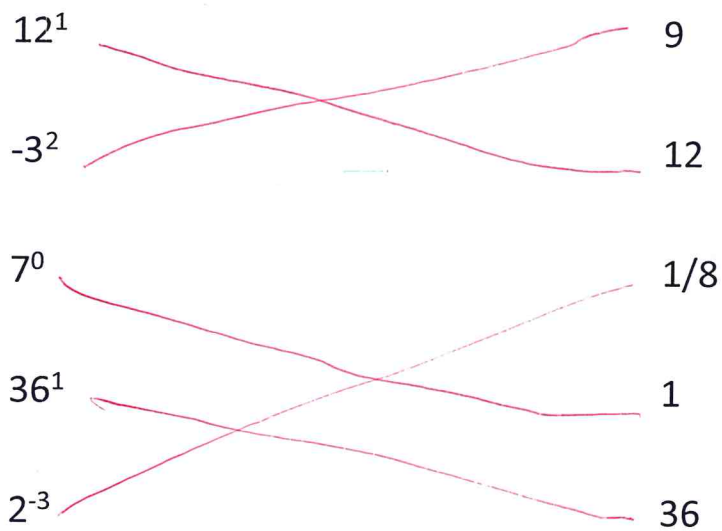
Word Bank:

EXPONENT

BASE

POWER

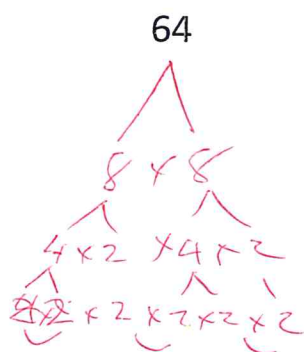
2) Match the columns (5 marks)



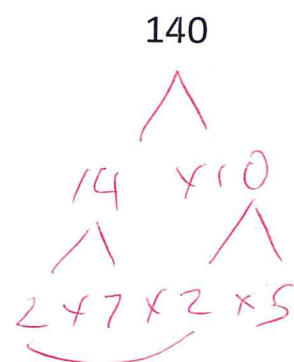
3) Fill in the following Table (10 marks)

Long Multiplication – Expanded Form	Power	Value
$3 \times 3 \times 3 \times 3$	3^4	81
$4 \times 4 \times 4$	4^3	
6×6	6^2	36
$10 \times 10 \times 10 \times 10 \times 10 \times 10$	10^6	1,000,000
$6 \times 6 \times 6$	6^3	216
$5 \times 5 \times 5$	5^3	125

4) Show the prime factor tree and the square root of the following numbers (8 marks)



$$\sqrt{64} = 2 \times 2 \times 2 = 8$$



$$\sqrt{140} = 2\sqrt{35}$$

5) Estimate the square root of the following number to the nearest decimal point. Show all work. (6 marks)

$$\begin{array}{r} \overline{13} \\ 36 \quad 40 \quad 49 \\ 6 \quad 7 \end{array}$$

$$\sqrt{40} \approx 6.3$$

$$\frac{4}{13} = .31$$

$$\begin{array}{r} 6.3 \\ \times 6.3 \\ \hline 189 \\ 3780 \\ \hline 39.69 \end{array} \therefore 6.3 \text{ is } \approx \sqrt{40}$$

6) Evaluate the following (10 marks)

$$2^5 = \overbrace{2 \times 2 \times 2 \times 2 \times 2}^{4 \quad 8 \quad 16 \quad 32} = 32$$

$$-3^3 = \overbrace{-3 \times -3 \times -3}^{9 \quad -27} = -27$$

$$7^{1/2} = \sqrt{7} \approx 2.6$$

$$\begin{array}{r} 5 \\ 13 \overline{) 65} \\ \underline{65} \\ 0 \end{array} \quad \begin{array}{r} 3 \\ 5 \overline{) 15} \\ \underline{15} \\ 0 \end{array} \quad \therefore \frac{3}{5} = .6$$

$$9^{-2} = \frac{1}{9 \times 9} = \frac{1}{81}$$

$$121^{1/2} = \sqrt{121} = 11$$