Name _____

Directions: When working each of the following questions, be sure to show all work. Be sure to round any decimals to the nearest tenth.

1) Express $-6\frac{2}{5}$ as a decimal

   a) -12.5

   b) -6.8

   c) -6.4

   d) -6.25

2) Express -4.16 as a fraction or mixed number in simplest form

   a) $-4\frac{4}{25}$

   b) $-4\frac{1}{2}$

   c) $-4\frac{1}{16}$

   d) $-4\frac{16}{100}$

3) Simplify $\left(\frac{5}{8}\right)^2$

a) $\frac{25}{64}$

b) $\frac{2}{4}$

c) $\frac{5}{8}$

d) $\frac{10}{16}$

4) Simplify $(-3)^3 + (5)^2$

a) -52

b) -2

c) 2

d) 52

5) Evaluate $(m-n)^2 + (m)^2$ if $m = -4$ and $n = -3$

a) -33

b) -17

c) 17

d) 9

6) Evaluate $(a)^2 * b$ $\ if\ a = 6\ and\ b = \frac{1}{4}$

a) -36

b) -6

c) 3

d) 9

7) Express b^{-5} using a positive exponent.

a) $\dfrac{1}{b^{-5}}$

b) b^5

c) $\dfrac{1}{b^5}$

d) *none of the above*

8) Express $\dfrac{1}{d^{-4}}$ using a positive exponent.

a) $\dfrac{1}{d^{-4}}$

b) $\dfrac{1}{d^4}$

c) d^4

d) *none of the above*

9) Evaluate $4m^0$

   a) 0

   b) 1

   c) 4

   d) $undefined$

10) Express m^3n^{-5} using a positive exponent.

   a) m^3n^{-5}

   b) m^3n^5

   c) $\dfrac{1}{m^3n^5}$

   d) $\dfrac{m^3}{n^5}$

11) Express 3.26×10^{-4} in standard decimal notation form.

   a) 0.000326

   b) 0.00326

   c) 326

   d) 32,600

12) Express 3.26×10^4 in standard decimal notation form.

   a) 0.000326

   b) 0.00326

   c) 326

   d) 32,600

13) Express 0.00013 in scientific notation.

   a) 0.00013×10^4

   b) 0.13×10^3

   c) 1.3×10^{-4}

   d) 1.3×10^4

14) Express 22,350 in scientific notation.

   a) 0.2235×10^{-5}

   b) 2.235×10^3

   c) 2.235×10^4

   d) 2.235×10^5

15) Express all values in scientific notation $\dfrac{(3030)+(.0034)}{.00066}$

a) $\dfrac{\left(3.03 \times 10^{3}\right)+\left(3.4 \times 10^{-3}\right)}{6.6 \times 10^{-4}}$

b) $\dfrac{\left(3.03 \times 10^{-3}\right)+\left(3.4 \times 10^{3}\right)}{6.6 \times 10^{4}}$

c) $\dfrac{\left(3.030 \times 10^{4}\right)+\left(3.40 \times 10^{-3}\right)}{6.06 \times 10^{-4}}$

d) *none of the above*

16) Solve $\sqrt{169}$

a) 11

b) 12

c) 13

d) 14

17) Solve for m if $m^{2} = 225$

a) 13

b) 14

c) 15

d) 25

18) Estimate $\sqrt{120}$

   a) ≈ 11

   b) ≈ 12

   c) ≈ 14

   d) ≈ 20

19) Estimate $\sqrt[3]{126}$

   a) ≈ −5

   b) ≈ 5

   c) ≈ 11

   d) ≈ 25

20) Classify $\frac{1}{3}$ as rational or irrational.

   a) *rational*

   b) *irrational*

21) Classify π as rational or irrational.

   a) *rational*

   b) *irrational*

22) Estimate to compare 2π *and* $\sqrt{17}$

a) $2\pi \; < \; \sqrt{17}$

b) $2\pi \; = \; \sqrt{17}$

c) $2\pi \; > \; \sqrt{17}$

d) *none of the above*