

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) $\frac{1}{b^{-5}}$

b) b^5

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

d) *none of the above*

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

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

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

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) $\frac{1}{m^3n^5}$
- d) $\frac{m^3}{n^5}$

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 $\frac{(3030)+(.0034)}{.00066}$

- a) $\frac{(3.03 \times 10^3) + (3.4 \times 10^{-3})}{6.6 \times 10^{-4}}$
- b) $\frac{(3.03 \times 10^{-3}) + (3.4 \times 10^3)}{6.6 \times 10^4}$
- c) $\frac{(3.030 \times 10^4) + (3.40 \times 10^{-3})}{6.06 \times 10^{-4}}$
- 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*