

## Algebra II/ Trig: 2.1-2.3 QUIZ

Classify each number in as many ways as possible

1.  $\pi$

irrational  
real

2.  $1.\overline{257}$

rational  
real

3.  $-\sqrt{25} = -5$

integer  
rational  
real

4. 3

Natural  
whole  
integer  
rat.  
real

State the property illustrated in each statement

5.  $7 \cdot 1 = 7$

identity prop.  
of mult.

6.  $5(a+b) = 5a + 5b$

dist. prop.

7.  $3 + (x + y) = (3 + x) + y$

Assoc. prop.  
of add.

8.  $14 + (-14) = 0$

inverse prop.  
of add.

Evaluate each expression

9.  $-4 \cdot 3^2 - 12$

$$-4(9) - 12$$

$$-36 - 12$$

$$\boxed{-48}$$

10.  $38 - 21 \div 3$

$$38 - 7$$

$$\boxed{31}$$

11.  $(3 \cdot 4)^2$

$$12^2$$

$$\boxed{144}$$

12.  $\left(\frac{2}{3}\right)^{-2}$

$$= \frac{3^2}{2^2} = \frac{9}{4}$$
$$\boxed{\frac{9}{4}}$$

13.  $-8^{\frac{2}{3}}$

$-(\sqrt[3]{8})^2$

$-(2)^2$

$-4$

14.  $(xy^3z^{-4})^0$

$1$

Simplify each expression. Write all answers with positive exponents.

15.  $x^{-5}x^7$

$$\boxed{x^2}$$

16.  $\left(\frac{y^2z^4}{x^3}\right)^{-2}$

$$\frac{y^{-4}z^{-8}}{x^{-6}}$$

$$\frac{x^6}{y^4z^8}$$

17.  $w^3 y^4 z \cdot w y^{-2} z$

$$w^4 y^2 z^2$$

18.  $\left(\frac{2x}{y}\right)^3 \left[\frac{x^{-5}}{(xy)^3}\right]^{-2}$

$$\frac{2^3 x^3}{y^3} \cdot \frac{x^{10}}{x^{-6} y^{-6}}$$

$$\frac{8x^3}{y^3} \cdot \frac{x^{10} x^6 y^6}{1} \quad \text{83}$$

$$8x^{19} y^3$$

State whether each relation represents a function.  
Also, State the domain and range.

19.  $\{(2,6), (5,-2), (8,-7)\}$

yes

Domain:  $\{2, 5, 8\}$

Range:  $\{-7, -2, 6\}$

20.  $\{(2,3), (-1,2), (-1,4)\}$

No

Domain:  $\{-1, 2\}$

Range:  $\{2, 3, 4\}$

Evaluate the function  $f(x) = 2x^2 - 7$  for the given values of x

21.  $x = -4$

$$f(-4) = 2(-4)^2 - 7$$

$$= 2(16) - 7$$

$$= 32 - 7$$

$$f(-4) = 25$$

22.  $x = 3$

$$f(3) = 2(3)^2 - 7$$

$$= 2(9) - 7$$

$$= 18 - 7$$

$$f(3) = 11$$