# Ch. 2 Review
## Advanced Algebra

Name Key

Evaluate using the order of operations.

1) $2^2(2+3)+5$ 4(5)+5 25

2) $16 \div 2 \times 6 - 1$ 8 × 6 - 1 47

3) $2 \cdot 4 + \frac{14}{5+2}$ 4 + 2 6

Identify the property:

4) $63 \cdot 1 = 63$ mult. ident.

5) $4yw = 4wy$ commutative prop. of mult.

6) $0 = 2x + (-2x)$ Additive Inv.

Simplify and write with positive exponents only.

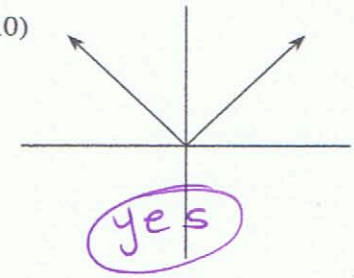
7) $\left(\frac{5r^2s^{-2}}{s^{-3}}\right)^{-1}$ $\frac{1}{5r^2s}$

8) $\left(\frac{s^{-3}}{4t}\right)^{-3}\left(\frac{5t^{-2}}{s^{-7}}\right)$ $\frac{4^3 s^9 t^3 5 s^7}{t^2} =$ $320 s^{16} t$

9) $\left[\frac{(a^3b^5)^2}{a^5b^2}\right]^{-1}$

Indicate which relation is a function:

10)



yes

11)

| x | y |
|---|---|
| 4 | -2 |
| 4 | 2 |
| 6 | -3 |
| 6 | 3 |

NO

12) $\{(\frac{1}{3},\frac{1}{4}),(\frac{1}{5},\frac{1}{5}),(\frac{1}{4},\frac{3}{4})\}$ (1, 2, 3) yes

Evaluate each function:

13) $f(x) = 5 - 3x$; *for* $x = 1$ $5 - 3(1)$ 2

14) $f(x) = -4x^2$; *find* $f(2)$ $-4(2)^2$ $-16$

15) $g(t) = t^2 - 3$; *find* $g(x)$ $x^2 - 3$

Perform the given operation for:

$f(x) = 2x^2$ & $g(x) = x^2 - 6$

16) $f + g$ $3x^2 - 6$

17) $(f)(g)$ $2x^2(x^2-6)$ $2x^4 - 12x^2$

18) $f - g$ $2x^2 - x^2 + 6$ $x^2 + 6$

Evaluate each composite function for:

$f(x) = 3x - 2$ and $g(x) = x^2$.

19) $f \circ g$ $3x^2 - 2$

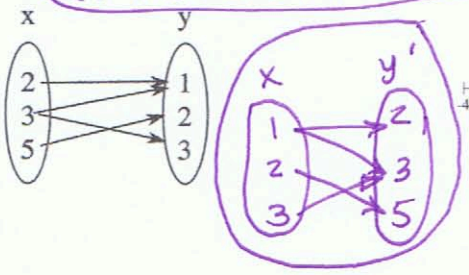
20) $g \circ f$ $(3x-2)^2$ $9x^2 - 12x + 4$

21) $(f \circ g)(10)$ $3(10)^2 - 2$ $298$

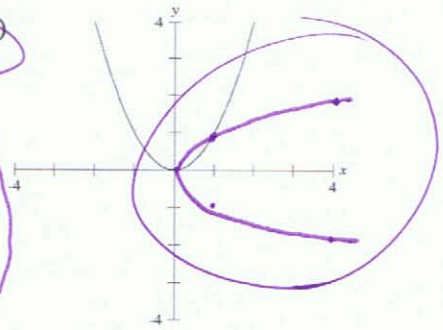
Find the inverse of each relation.

22) {(-1,0),(-2,1),(4,3),(3,4)} (0,-1) (1,-2) (3,4) (4,3)

23)




24)




Find the inverse of each function:

25) $f(x) = \frac{1}{3}x - 1$ $y' = 3x - 3$

26) $f(x) = \frac{1}{4}(x-1)$ $y' = 4x + 1$

27) $f(x) = \frac{x+8}{3}$ $y' = 3x - 8$

Evaluate:

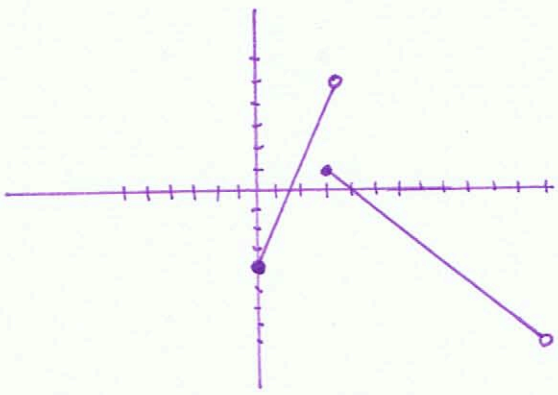
28) $-\lceil 6.165 \rceil$ 7 $-7$

29) $|-7| - |2.2|$ $4.8$

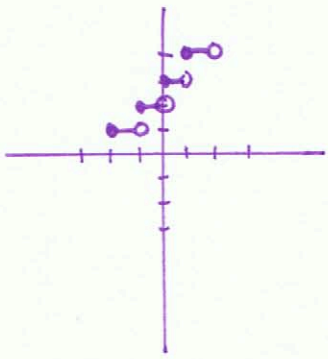
30) $|-6| + [3.3]$ $6 + 3$ $9$

Graph each special function.

31) $g(x) = \begin{cases} 3x - 4 & \text{if } 0 \le x < 3 \\ 4 - x & \text{if } 3 \le x < 12 \end{cases}$



32) $f(x) = [x] + 3$



33) $g(x) = -\frac{1}{2}|x|$