

Chapter 7 (7.1, 7.2, & 7.4) Practice Test

Date _____ Period _____

Write each expression in radical form.

1) $2^{\frac{7}{6}}$

$(\sqrt[6]{2})^7$

3) $(5m)^{\frac{5}{2}}$

$(\sqrt{5m})^5$

2) $6^{\frac{3}{2}}$

Remember ()'s
 $(\sqrt{6})^3$ or $(\sqrt[3]{6})^2$

4) $(5x)^{\frac{1}{4}}$

$\sqrt[4]{5x}$

Write each expression in exponential form.

5) $(\sqrt[3]{2p})^4$

$(2p)^{\frac{4}{3}}$

6) $\sqrt[4]{5}$

$5^{\frac{1}{4}}$

7) $(\sqrt{6})^5$

$6^{\frac{5}{2}}$

8) $\sqrt{3x}$

$(3x)^{\frac{1}{2}}$

MUST USE ()'S
WITH A
NUMBER + VARIABLE

Evaluate without a calculator. Clearly show work!!

9) $81^{\frac{3}{4}}$

27

WORK

$3 \cdot 3 \cdot 3 \cdot 3 = 81 \checkmark$
 $\Downarrow$
 $(3)^4 = 81$

10) $16^{\frac{3}{2}}$

64

WORK

$4 \cdot 4 = 16 \checkmark$
 $\Downarrow$
 $(4)^3 = 64$

Evaluate with a calculator. Round to 2 decimals.

11) $49^{\frac{3}{2}}$

343

12) $8^{-\frac{5}{3}}$ $\frac{1}{32} = .03$

WRITE EXPRESSIONS
H → L EXPONENTS !!

Perform the indicated operation. SHOW WORK!!!! Circle the answer

13) $g(x) = 3x - 2$
 $f(x) = -2x + 1$
 Find $g(x) + f(x)$

$$(3x-2) + (-2x+1) =$$

$$x-1$$

$$\text{X-1}$$

14) $g(x) = 4x - 1$
 $f(x) = x^2 - 4x$
 Find $g(x) - f(x)$

$$-x^2 + 8x - 1$$

$$(4x-1) - (x^2-4x) =$$

$$4x-1 - x^2+4x =$$

$$-x^2 + 8x - 1$$

15) $g(n) = 3n - 1$
 $h(n) = -3n^2 + n - 3$
 Find $g(n) - h(n)$

$$3n^2 + 2n + 2 \quad (3n-1) - (-3n^2+n-3) =$$

$$3n-1+3n^2-n+3 =$$

$$3n^2 + 2n + 2$$

16) $h(x) = -4x$
 $g(x) = x^3 - 3x^2$
 Find $h(x) \cdot g(x)$

$$-4x^4 + 12x^3$$

$$-4x(x^3-3x^2) =$$

$$-4x^4 + 12x^3$$

17) $g(x) = x - 5$
 $h(x) = 3x + 1$
 Find $g(x) \cdot h(x)$

$$3x^2 - 14x - 5$$

$$(x-5)(3x+1) =$$

$$3x^2+x-15x-5 =$$

$$3x^2-14x-5$$

18) $g(x) = 3x - 5$
 $f(x) = -2x^2 - 3 + 2x$
 Find $g(x) \cdot f(x)$

$$-6x^3 + 16x^2 - 19x + 15$$

$$(3x-5)(-2x^2+2x-3) =$$

$$-6x^3 + 6x^2 - 9x + 10x^2 - 10x + 15 =$$

$$-6x^3 + 16x^2 - 19x + 15$$

Fix $2A^3 - 10A^2 + 4A$

19) $h(a) = a^3 - 5a^2 + 2a$
 $g(a) = -2a$
 Find $h(a) \div g(a)$

$$\frac{2a^3 - 10a^2 + 4a}{-2a} =$$

$$\frac{2a^3}{-2a} + \frac{-10a^2}{-2a} + \frac{4a}{-2a} =$$

$$-a^2 + 5a - 2$$

GRAPH FUNCTION AND ITS INVERSE (Label the graphs)

1) Graph the function and label with function notation.

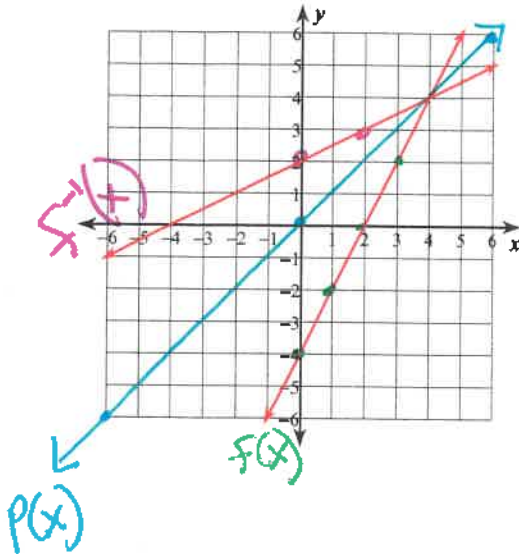
2) Graph $p(x)=x$ and label.

3) Find the inverse of function. Then graph the inverse function and label with function notation.

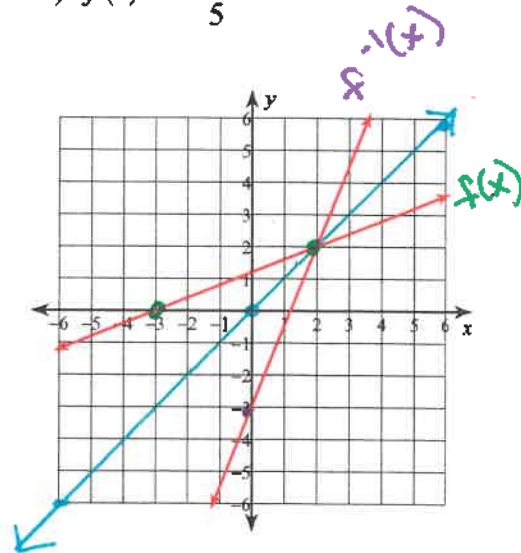
NOTICE

- ① LINES BOTH INTERSECT AT $P(x)$
- ② $f(x)$ and $f^{-1}(x)$ ARE MIRROR IMAGES.

20) $f(x) = 2x - 4$ $m = \frac{2}{1}$ $b = -4$



21) $f(x) = \frac{2x+6}{5}$



$f(x) = \frac{2}{5}x + \frac{6}{5}$

$f^{-1}(x)$

$$\begin{array}{r} x = 2y - 4 \\ +4 \quad +4 \\ \hline 2y = x + 4 \\ \frac{2y}{2} = \frac{x+4}{2} \end{array}$$

$y = \frac{1}{2}x + 2$

$f^{-1}(x) = \frac{1}{2}x + 2$

$m = \frac{1}{2}$
 $b = 2$

use calc to find pts that are integers

x	y
-3	0
2	2

$f^{-1}(x):$

$5 \cdot x = \left(\frac{2y+6}{5}\right) \cdot 5$

$5x = 2y + 6$
 $-6 \quad -6$

$2y = 5x - 6$
 $\frac{2y}{2} = \frac{5x-6}{2}$

$y = \frac{5}{2}x - 3$

$f^{-1}(x) = \frac{5}{2}x - 3$
 $m = \frac{5}{2}$ $b = -3$

Find the inverse of each function. Use function notation. Circle answer.

22) $g(n) = -4n - 8$

$$\begin{array}{r} x = -4y - 8 \\ +8 \quad +8 \\ \hline -4y = x + 8 \\ \frac{-4y}{-4} = \frac{x+8}{-4} \end{array}$$

$$y = -\frac{1}{4}x - 2 \rightarrow \boxed{g^{-1}(n) = -\frac{1}{4}n - 2}$$

23) $f(n) = -\frac{2n}{3}$

$$\rightarrow \frac{-3}{2} (x) = \left(-\frac{2}{3} y\right) \cdot \frac{-3}{2}$$

$$y = \frac{-3}{2}x$$

$$\rightarrow \boxed{f^{-1}(n) = \frac{-3}{2}n}$$

24) $h(n) = \frac{n+5}{2}$

$$\rightarrow 2(x) = \left(\frac{y+5}{2}\right) 2$$

$$\begin{array}{r} 2x = y + 5 \\ -5 \quad -5 \\ \hline \end{array}$$

$$y = 2x - 5$$

$$\rightarrow \boxed{h^{-1}(n) = 2n - 5}$$

25) $g(x) = \frac{20+5x}{4}$

$$\rightarrow 4 \cdot x = \left(\frac{20+5y}{4}\right) \cdot 4$$

$$\begin{array}{r} 4x = 5y + 20 \\ -20 \quad -20 \\ \hline \end{array}$$

$$\frac{5y}{5} = \frac{4x-20}{5}$$

$$y = \frac{4}{5}x - 4$$

$$\boxed{g^{-1}(x) = \frac{4}{5}x - 4}$$

26) $f(n) = -\frac{1}{2}n - 3$

$$\rightarrow x = \frac{-1}{2}y - 3$$

$$\begin{array}{r} +3 \quad +3 \\ \hline -2 \left(-\frac{1}{2}y = x + 3 \right) \end{array}$$

$$y = -2x - 6$$

$$\rightarrow \boxed{f^{-1}(n) = -2n - 6}$$

27) $f(x) = -\frac{5}{4}x - 5$

$$\rightarrow x = \frac{-5}{4}y - 5$$

$$\begin{array}{r} +5 \quad +5 \\ \hline -\frac{4}{5} \left(-\frac{5}{4}y = x + 5 \right) \end{array}$$

$$y = \frac{-4}{5}x + 5 \left(\frac{-4}{5} \right)$$

$$y = -\frac{4}{5}x - 4$$

$$\rightarrow \boxed{f^{-1}(x) = -\frac{4}{5}x - 4}$$