11-4-13 Quiz 8

7.5, 7.6, 7.7, 8.1

Quiz 8 7.5

(1.) (#12) $y < x - 2$ GRAPH 2D } SHADE plane

(2.) (#32) $x < 5$ " "

7.6

(3) (#2) $x + y \leq 7$ (l1)

$x - y \leq 4$ (l2)

↳ $x - y = 4$ GRAPH using 2 intercepts (x and y ints.)

(4.) (#6) $y \geq -1$ (l1) ⇒ SHADE ABOVE a HORIZONTAL LINE

$x \geq 3$ (l2) (See NOTES)

2.7

Q8

(5.) #8 $y = 30$ when $x = 3$

FIND k; $y = kx$

(6.) #14 same as (5.)

$y = 500$ when $x = 60$

(7.) #10 $y = 8$ if $x = 3$

FIND k; $y = \frac{k}{x}$

(8.) #22 same as #16

$y = 0.2$, $x = 5$

4.1

*Quiz 8

EX

PROS

1 → 15, 16* 9@
19, 21

2 → 23, 37, 45, 47
48* 9@; 38 9@

3 → 49, 54* 10@

4,5 → 57, 58* 10@
67, 68* 10@

5 → 73, 71, 72* 11@

6 → 77, 78* 11@
83, 85, 86* (12) 5EC

4.1

(15.) $d^3 \cdot d^{10} \neq d^{30}$

$\neq d^7$

$= d^{13}$

Math 104

(19) $6^5 \cdot 6^{10} = 6^{15}$

(21) $(3y)^4 \cdot (3y)^8$

$= (3y)^{12}$ $12 = 4+8$

(33) $\frac{7^5}{7^2} \neq 7^{5/2}$

$\neq 7^{10}$

$= 7^{3} = 5-2$ $= 7^3$

(46.) $\frac{(5a)^7}{(5a)^6} = (5a)^{1} = 7-6$

$= (5a)^1$

$= (5a)$

$= 5a$

ALT-1

$(5a)^7 = 5^7 a^7$

$(5a)^6 = 5^6 \cdot a^6$

$\frac{5^7 \cdot a^7}{5^6 \cdot a^6} = 5^1 \cdot a^1$

$= 5a$

(47) $\frac{x^{12} \cdot y^9}{x^0 \cdot y^2} = x^{12} \cdot y^7$

$12 - 0 = 12$

$9 - 2 = 7$

(45.)

$\frac{8 \cdot a^9 b^7}{2 a^2 b^1}$

$= 4 \cdot a^7 \cdot b^6$

(49.) t^0 when $t = 15$

$t^0 = (t)^0 = (15)^0$

$= 1$

$\boxed{a^0 = 1}$ rule

(57.) $(x^3)^{11} = x^{3 \cdot 11} = x^{33}$

(67.) $(-5 \cdot n^7)^2 = (-5)^2 \cdot (n^7)^2$

$25 \cdot n^{14} = 25n^{14}$

$(ab)^n = a^n b^n$

see example 5 (b)

$(-5)^2 = (-5) \cdot (-5) = \text{POS} = 25$

(73.) $(2x^5)^3 \cdot (3x^4)$

$= 2^3 \cdot (x^5)^3 \cdot 3x^4$

$= 8 \cdot x^{15} \cdot 3 \cdot x^4$

$= 24x^{15} \cdot x^4$

$= \boxed{24x^{19}}$

$(ab)^n = a^n b^n$

(77.) $\left(\frac{7}{6n}\right)^2 = \frac{7^2}{(6n)^2} = \frac{49}{6^2 \cdot n^2}$

$= \boxed{\frac{49}{36n^2}}$

$\left(\frac{a}{b}\right)^n = \frac{a^n}{b^n}$

84.

$$\left(\frac{a^3}{-2b^5}\right)^4 = \frac{(a^3)^4}{(-2b^5)^4} = \frac{a^{12}}{(-2)^4 \cdot (b^5)^4}$$

use:

$$\left(\frac{a}{b}\right)^n = \frac{a^n}{b^n}$$

$$= \frac{a^{12}}{16 \cdot b^{20}}$$

$$(ab)^n = a^n b^n$$

$$(abc)^m = a^m b^m \cdot c^m$$

85.

$$\left(\frac{5x^7y}{-2z^4}\right)^3 = \frac{5^3 \cdot (x^7)^3 y^3}{(-2)^3 (z^4)^3} = \frac{125x^{21}y^3}{(-8) \cdot z^{12}} = -\frac{125x^{21}y^3}{8z^{12}}$$

math 104

4.2

Σx	prob
1	9
2	13
3	13
4,5	37, 45
6	51, 55
7	65

(9) $8x^3 - 11x^2 + 6x + 1$

LIST
$8x^3$
$-11x^2$
$6x$
1

$= 8x^3 + (-11x^2) + 6x + 1$ — separate 4 terms

4 terms

(13.) + my stuff

$8x^4 + 2x + 17$

TERM	LIST	COEFFICIENT	Degree
1	$8x^4$	8	4
2	$2x^1$	2	1
3	17 $= 17 \cdot 1$ $= 17 \cdot x^0$	17	0

(37.) $5n^2 + n + 6n^2$

$= 11n^2 + n$

Review see test 1

(45.) $10x^2 + 2x^3 - 3x^3 - 4x^2 - 6x^2 - x^4$

$11n^2$

$= 0 \cdot x^2 + (-x^3) + (-x^4)$

(45.)

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

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

(51.) $-x^4 + 9$

$x = 3^*, \; x = -3$

new version of (51) $-x^4 + 9 = -(x)^4 + 9 = -(3)^{4^*} + 9$

$= -81 + 9 = \boxed{-72}$

note: $-x^4 = (-1) \cdot x^4$

$= (-1) \cdot (x^4)$

$= -(x^4)$

$= -(x)^4$

$\boxed{-x^4 = -(x)^4}$

$x = -3$

$-(-3)^4 + 9$

$= -81 + 9$

$= -72$

Read (51) $-4 \cdot x + 9$

$= -4 \cdot (x) + 9$

$x = 3 : -4 \cdot (3) + 9$

$= -12 + 9$

$= \boxed{-3}$

$x = -3 : -4 \cdot (-3) + 9$

$= +12 + 9$

$= \boxed{+21}$

(55.) $-3x^3 + 7x^2 - 4x - 8$

$= -3 \cdot (x)^3 + 7 \cdot (x)^2 - 4 \cdot (x) - 8$

$x = 3 : -3 \cdot (3)^3 + 7 \cdot (3)^2 - 4 \cdot (3) - 8$

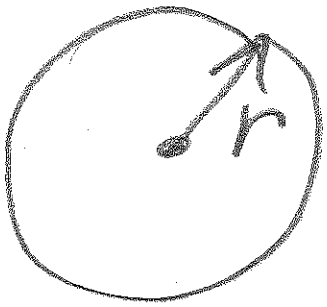
55

$= \downarrow -3 \cdot 27 \quad \downarrow +7 \cdot 9 \quad \downarrow -12 \quad \downarrow -8$

$= -81 + 63 + (-12) + (-8)$

$-101 + 63 = \boxed{-38}$

65.



$C = 2\pi r$ (Egypt: 6000 B.C.)

$r = 10\text{ cm}$

$C = 2(3.14) \cdot 10\text{ cm}$

$= (6.28) \cdot (10\text{ cm}) = 62.8\text{ cm}$

(65) note:

area = πr^2 (6000 BC)

Find area:

$= (3.14) \cdot (10\,cm)^2$

$= 3.14 \cdot 100\,cm^2$

$= 314\,cm^2$