Answer Key

Review for Test #18

1. Factor each of the following

$x^2 + 4x - 32$ $S=4$, $P=-32$ $-1 \quad 32$ $-2 \quad 16$ $-4 \quad 8$ $(x-4)(x+8)$	$12x^2 + 5x - 2$ $S=5$, $P=-24$ $-1 \quad 24$ $-2 \quad 12$ $-3 \quad 8$ $-4 \quad 6$ $(12x-3)(12x+2)$ $\frac{}{3} \quad \frac{}{4}$ $(4x-1)(3x+2)$	$25x^2 - 4$ DOTS $(5x+2)(5x-2)$
$6x^3y - 4xy^5$ GCF $2xy(3x^2-2y^4)$	$12x^2y^5 + 36x^4y^2 - 18x^3y^5$ GCF $6x^2y^2(2y^3+6x^2-3xy^3)$	$12x^3 + 2x^2 - 30x - 5$ Factor By Grouping $2x^2(6x+1) \mid -5(6x+1)$ $(2x^2-5)(6x+1)$

2. Solve: $(7/5) + x > 7 - (2/5)x$

$+\frac{2}{5}x \quad + 2/5\,x$

$\frac{7}{5} + \frac{7}{5}x > 7$

$-\frac{7}{5} \qquad -\frac{7}{5}$

$\frac{7}{5}x > \frac{28}{5}$

$\frac{7}{5} \qquad \frac{7}{5}$

$x > 4$

3. Write a formula for the *n*th term of sequence *B?* B = 7, 10, 13, 16,…

(1, 7)
(2, 10)
(3, 13)

$m = \frac{10-7}{2-1} = \frac{3}{1} = 3$

$y = mx + b$

$7 = 3(1) + b$

$4 = b$

$B = 3n + 4$

4. Eliza is given a rectangular blanket. If the length of Eliza's blanket is represented by 3x – 4 and the width is represented by 2x – 5, then what is the total area of the blanket? What is the perimeter of the blanket?

$A = (3x-4)(2x-5)$

$6x^2 - 15x - 8x + 20$

$A = 6x^2 - 23x + 20$

$P = 2(3x-4) + 2(2x-5)$

$P = 6x - 8 + 4x - 10$

$P = 10x - 18$

5. A doofus drops a penny off the Top of the Rock. The distance, d(t), in inches, the penny travels after *t* seconds can be modeled by the function $d(t) = 0.7t^2$. If the doofus was to graph this function, what does the slope between *t=4* and *t=7* represent in the context of this problem?

speed in inches per second

6. Eliza deposited $1800 into a bank account, earning 2.7% interest, compounded annually. She made no deposits or withdrawals. Determine how much money, to the nearest cent, would be in the account after 9 years.

$A = 1800(1+.027)^9$

$A = 2287.739114$

$2287.74

7. Five bags of popcorn and two sodas cost $23. Two bags of popcorn and three sodas cost $18. Find the cost of one bag of popcorn and the cost of one soda.

$-3(5p+2s=23)$

$2(2p+3s=18)$

$-15p-6s=-69$

$4p+6s=36$

$-11p=-33$

$p=3$

$5p+2s=23$

$5(3)+2s=23$

$15+2s=23$

$2s=8$

$s=4$

Popcorn = $3

Soda = $4

8. For each of the following, determine whether the sequence is geometric or arithmetic. If it is geometric state the common ratio and if it is arithmetic state the common difference.

(a) 5, -15, 45, ... Geometric $r=-3$

(b) 7, 12, 17, ... Arithmetic $d=5$

(c) 20, 10, 5, ... Geometric $r=\frac{1}{2}$

(d) 8.7, 7.2, 5.7, ... Arithmetic $d=-1.5$

(9) $x^3+3x^2-4x-12$

$x^2(x+3) \mid -4(x+3)$

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

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