

DO NOT TURN THIS PAGE UNTIL YOU ARE INSTRUCTED TO DO SO

- ❖ Write your name below on the space provided.
- ❖ This test has a total of 4 pages.
- ❖ Work the problem in the space provided. If you need more space, write on the back of the test. Be sure to label the test as to which problem is on the back.
- ❖ To insure maximum credit, show your work. In general, full credit will not be given for unsupported answers.
- ❖ Be sure to write neatly in pencil. If I cannot read what was written, do not expect the problem to be graded.
- ❖ If you finish early, go over the test again.

Good luck!

Number	Maximum	Score
1	2	
2	6	
3	6	
4	20	
5	5	
6	20	
7	5	
8	24	
9	6	
10	6	
Total	100	

Name _____

CIRCLE FINAL ANSWERS

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1) (2 points) What does it mean to factor?

2) (3 points each) Find the GCF of the following:

a) x^2y^3, x^5y^3, x^4, y^2

b) $-16p^7, 8p^5q, 40p^8q^2$

3) (3 points each) Factor out the GCF from the following:

a) $50y^2 - 50xy^2 + 5x^2y^2$

b) $5t^2(x+6) - (x+6)$

4) (5 points each) Factor completely:

a) $x^2 - 4x - 12$

b) $x^2 + 10x + 25$

c) $x^3 - 7x^2 + 6x - 42$

d) $2a^2 + ab - 6a - 3b$

5) (5 points) Find and explain the mistake the student made in factoring the expression $12x^2 + 6xy - 2x - y$. Then show how to correctly factor the expression:

$$12x^2 + 6xy - 2x - y$$
$$(12x^2 + 6xy) - (2x - y)$$
$$6x(2x + y) - (2x - y)$$
$$???$$

6) (5 points each) S'more factoring completely:

a) $x^2(x-9) - 4(x-9)$

b) $-5w^4 - 15w^3 + 90w^2$

c) $x^4 - 625$

d) $8x^3 - 8$

7) (1 point each) Match the factored form to the expanded form:

_____ $(a+b)^2$

A: $a^2 - 2ab + b^2$

_____ $(a-b)^2$

B: $a^2 - b^2$

_____ $(a+b)(a-b)$

C: $a^3 + b^3$

_____ $(a+b)(a^2 - ab + b^2)$

D: $a^2 + 2ab + b^2$

_____ $(a-b)(a^2 + ab + b^2)$

E: $a^3 - b^3$

8) (6 points each) Solve the following equations for the variable:

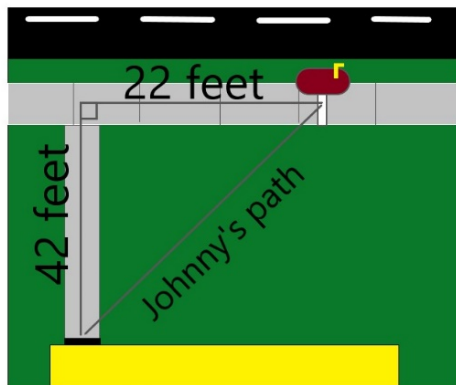
a) $(8x+7)(5x-2)=0$

b) $x^2+6x+5=0$

c) $-2x^4-28x^3-96x^2=0$

d) $10x^2+11x+3=0$

9) (6 points) Johnny Cutterson never likes to walk all the way around to get to his mailbox. He instead will walk along the diagonal from his front door to his mailbox. See the figure below. How many feet does he save by cutting across the lawn instead of walking straight to the sidewalk and then turning right to walk to the mailbox? Round your final answer to 1 decimal place.



10) (6 points) While mid-air, a cow gymnast calculates that the distance her hooves off the ground can be approximated by the function $h(t) = -16t^2 + 72t + 88$ where t is time in seconds and h is height in feet. At what time will the cow's hooves land on the ground?