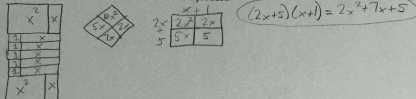


Ch.4 Factoring + Trig Test Version 3

Name: Calvin Jun  
Date: 12/2/20 Pd: 2

Read all directions carefully.  
Watch out for simple, careless errors.  
Please indicate all answers clearly so they are easy to locate.  
Show ALL work you have done to receive full credit for your answer.

- 1) (5 pts.) Draw a rectangle using algebra tiles for the expression  $2x^2 + 7x + 5$ . Sketch your rectangle and write the area as a sum and as a product.



- 2) (3 pts.) Multiple Choice: The quadratic expression  $6x^2 + 4x - 12$  has several possible sets of factors. Which set of factors below is not a possible answer? Explain how you know.

- a.  $6(x-1)(x+2)$  b.  $(6x-6)(x+2)$   
c.  $(x-6)(6x+2)$  d.  $(3x-3)(2x+4)$

(x-6)(6x+2) is not a possible answer to  $6x^2 + 4x - 12$  because  $-36x + 2x$  does not equal  $4x$ , and instead equals  $-34x$ .

- 3) (8 pts.) Factor the following quadratics if possible. If a quadratic cannot be factored, explain why not.

a.  $2x^2 - 11x + 12$   

$$\begin{array}{r|rr} 2x^2 & -11x & 12 \\ -4x & -6x & 12 \\ \hline 2x^2 & -4x & \\ -4x & -6x & 12 \end{array}$$

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

b.  $x^2 + 7x + 7$   
 This quadratic cannot be factored because the only values that equal 7 are 7 and 1, which however do not add up to 7, meaning it cannot be factored.

c.  $5m^2 - 14m + 8$   

$$\begin{array}{r|rr} 5m^2 & -14m & 8 \\ -10m & -4m & 8 \\ \hline 5m^2 & -10m & \\ -10m & -4m & 8 \end{array}$$

$$(5m-4)(m-2)$$

d.  $3p^2 - 1p$   

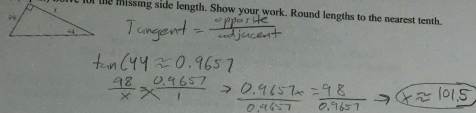
$$\begin{array}{r|rr} 3p^2 & -1p & \\ 3p & -3p & \\ \hline 3p^2 & -3p & \\ 3p & -3p & \end{array}$$

$$3p(3p-1)$$

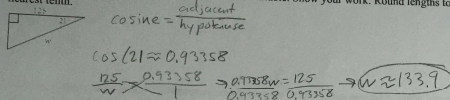
Ch.4 Factoring + Trig Test Version 3

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Date: \_\_\_\_\_ Pd: \_\_\_\_\_

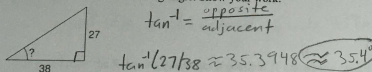
- 4) (5 pts.) Solve for the missing side length. Show your work. Round lengths to the nearest tenth.



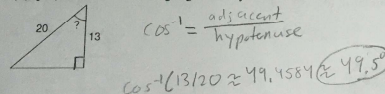
- 5) (5 pts.) Use trigonometric ratios to solve for the variable. Show your work. Round lengths to the nearest tenth.



- 6) (3 pts.) Solve for the missing angle. Show your work.



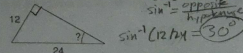
- 7) (3 pts.) Solve for the missing angle. Show your work.



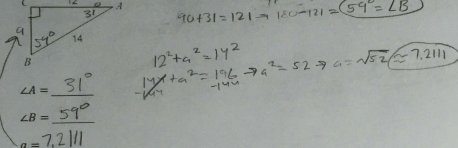
Ch.4 Factoring + Trig Test Version 3

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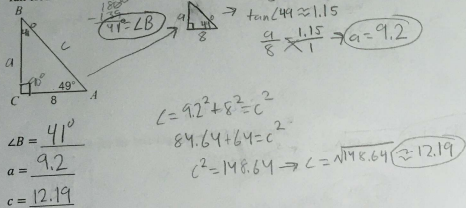
- 8) (3 pts.) Solve for the missing angle. Show your work.



- 9) (6 pts.) Solve the triangle for all missing side lengths and angle measures. Show your work to receive full credit.



- 10) (6 pts.) Solve the triangle for all missing side lengths and angle measures. Show your work to receive full credit.



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Name: \_\_\_\_\_  
Date: \_\_\_\_\_ Pd: \_\_\_\_\_

- Bonus) (4 pts.) Factor each of the expressions below, if possible. Show your work.

a.  $169x^2 - 289$   

$$\begin{array}{r|rr} 169x^2 & -289 \\ 13x & -17 \\ \hline 169x^2 & -289 \\ 13x & -17 \end{array}$$

$$(13x+17)(13x-17)$$

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

$$\begin{array}{r|rr} x^2 & +10x & +25 \\ x & +5 \\ \hline x^2 & +10x & +25 \\ x & +5 \end{array}$$

$$(x+5)(x+5) \text{ or } (x+5)^2$$

c.  $16x^2 - 8x + 1$   

$$\begin{array}{r|rr} 16x^2 & -8x & +1 \\ 4x & -1 \\ \hline 16x^2 & -8x & +1 \\ 4x & -1 \end{array}$$

$$(4x-1)(4x-1) \text{ or } (4x-1)^2$$

d.  $x^2 - \frac{1}{4}$   

$$\begin{array}{r|rr} x^2 & -\frac{1}{4} \\ x & -\frac{1}{2} \\ \hline x^2 & -\frac{1}{4} \\ x & -\frac{1}{2} \end{array}$$

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