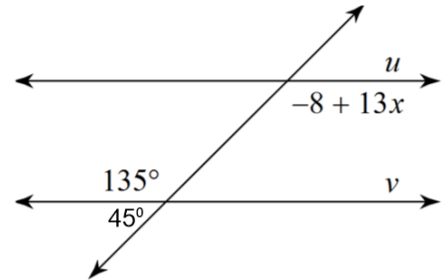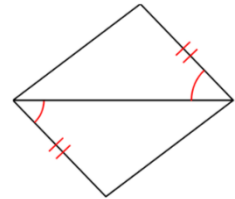# Math 2B Final Review

Circle the correct answer and then write it in the answer blank provided. Show all work on every problem.
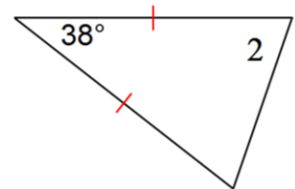
_____1. State the value for x that proves lines u and v are parallel.
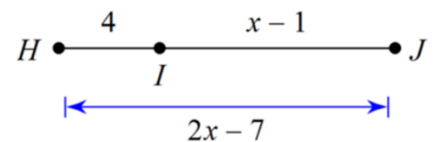   (a) 9.77   (b) 4.08   (c) 11   (d) 130

_____2. State if the two triangles can be proven congruent. If so, state how you know.
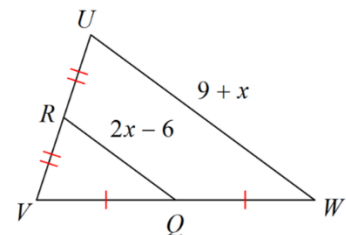   (a) HL   (b) SAS   (c) Not Congruent   (d) ASA

_____3. Find the value of x if $m\angle 2 = 18x - 1$
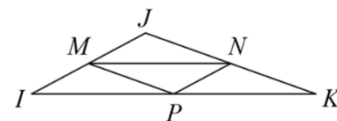   (a) 2.17   (b) 7.89   (c) 4   (d) 71

_____4. Find a value for x that would prove the segment addition postulate.
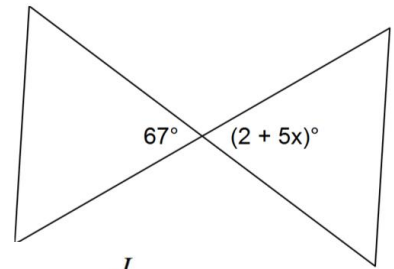   (a) 10   (b) 5   (c) 10/3   (d) 6

_____5. Solve for x.
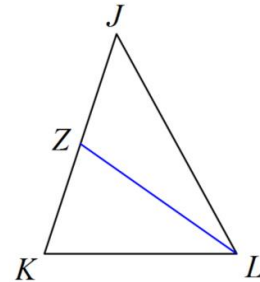   (a) 1   (b) 7   (c) 5   (d) 15

_____6. *M, N,* and *P* are the midpoints of the sides. Name a segment parallel to $\overline{MP}$.
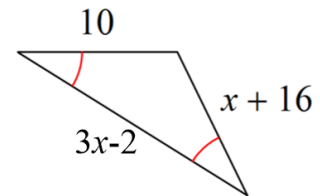(a) $\overline{NP}$ (b) $\overline{IJ}$ (c) $\overline{IK}$ (d) $\overline{JK}$

_____7. Solve for x.
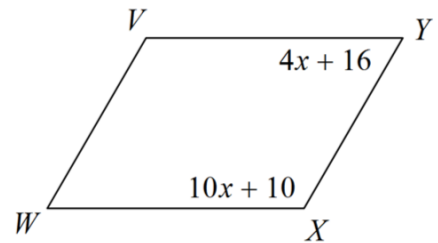
      (a) 60   (b) 13.8   (c) 22.2   (d) 13

$67°$ $(2 + 5x)°$

_____8. Given ZL is a median, find x if $KJ = 3x - 9$,
$ZL = x + 4,\ and\ ZJ = x - 2.$

      (a) 13/2   (b)7/2   (c) 5   (d) 7

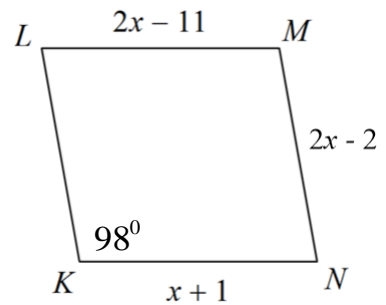J

Z

K L

_____9. Find the value of x.

      (a) -6   (b) 14   (c) 9   (d) 26

10

$x + 16$

$3x-2$

_____10. Given the following parallelogram, solve for x.
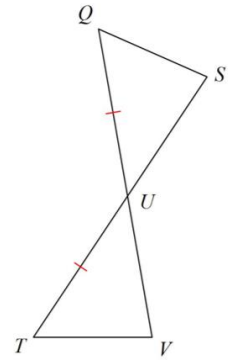
      (a) 1   (b) 11   (c) 77/3   (d) 13/7

V Y

$4x + 16$

$10x + 10$

W X

_____11. Given the following parallelogram, solve for x.

      (a) 12   (b) 3   (c) 9/4   (d) 98

L $2x - 11$ M

$2x - 2$

98^0

K $x + 1$ N
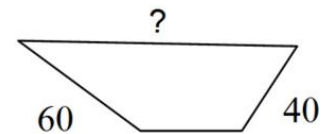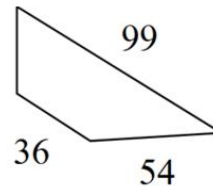
_____12. State what additional information is required in order to know that the triangles are congruent by **ASA**.

      (a) $\angle TUV \cong \angle QUS$ (b) $\angle V \cong \angle S$ (c) $\angle T \cong \angle Q$ (d) $\overline{UV} \cong \overline{US}$
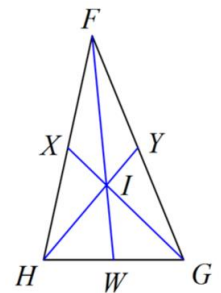
_____13. The polygons are similar, find the missing side length.
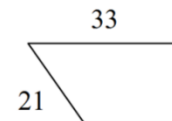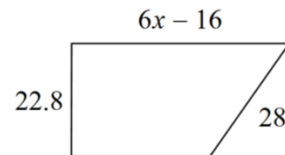
      (a) 110   (b) 89.1   (c) 73.33   (d) 65

99

?

36   54   60   40

_____14. Given the segments are medians   Find x if $FI = -8 + 3x$ and $FW = 4x - 7$

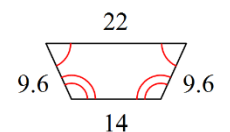   (a) 3.03   (b) -1   (c) .28   (d) 10

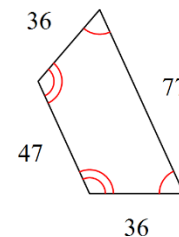_____15. The polygons are similar, solve for *x*.

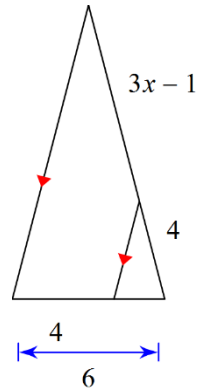   (a) 11   (b) 10   (c) 7.46   (d) 8.64

$6x - 16$

22.8   28

33

21

_____16. State if the polygons are similar. If they are similar what is the theorem or postulate that proves they are similar.

36   77   47   36

22   9.6   9.6   14

(a) Not Similar   (b) ASA   (c) AA
(d) Corresponding angles are $\cong$ and corresponding sides are proportional
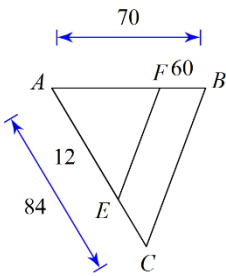
_____17. The triangles are similar. Solve for x.

A) 6   B) 7

C) 10   D) 3

$3x - 1$

4

4

6

_____18. State if the triangles in each pair are similar. If so, state how you know they are similar and complete the similarity statement.

70

F 60

A B
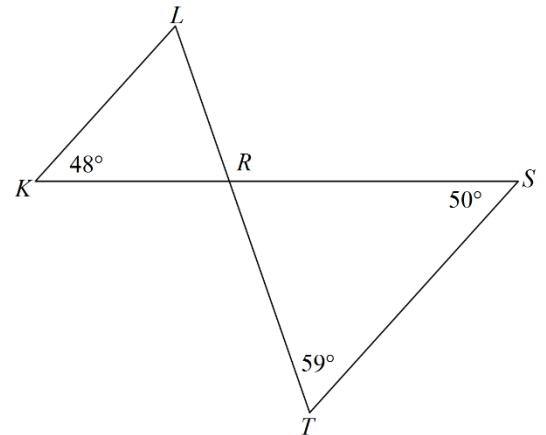
12

84   E

C

$\triangle ABC \sim$ _____

A) similar; SSS similarity; $\triangle EAF$ B) similar; SAS similarity; $\triangle AFE$

C) not similar   D) similar; AA similarity; $\triangle EAF$

_____19. State if the triangles are similar. If so, state how you know they are similar and complete the similarity statement

L

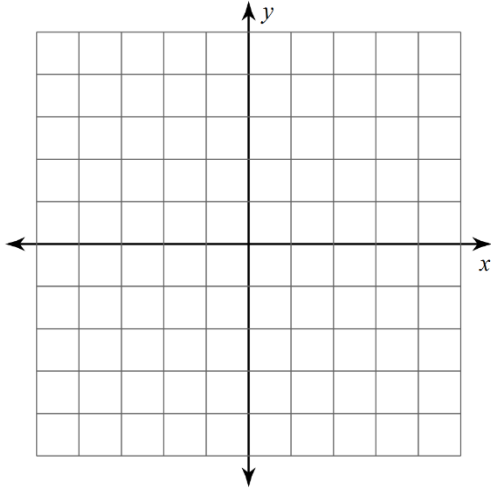$\triangle RST \sim$ _____

A) not similar   B) similar; SSS similarity; $\triangle RLK$

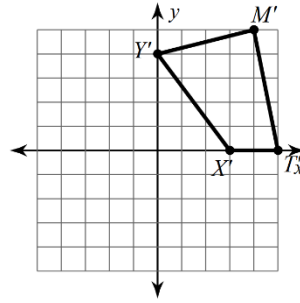C) similar; AA similarity; $\triangle RKL$ D) similar; AA similarity; $\triangle RLK$

48° R

K S

50°

59°

T

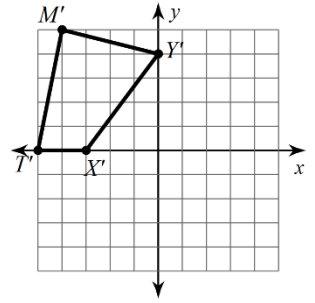_____20. Graph the image of the figure using the transformation given.

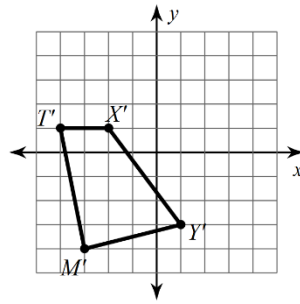rotation 180° about the origin
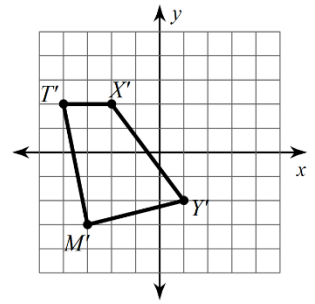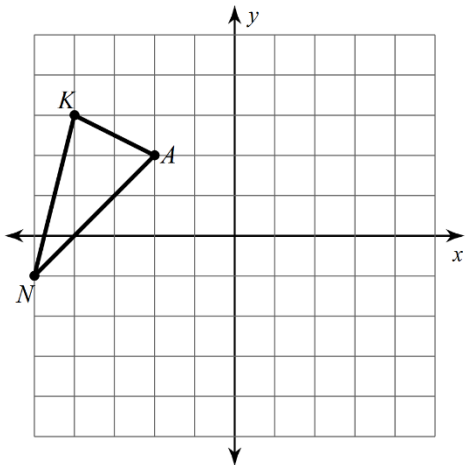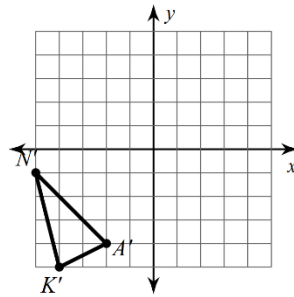$M(-4, -5), T(-5, 0), X(-3, 0), Y(0, -4)$
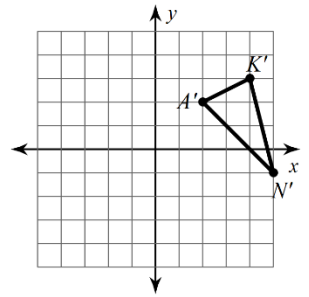
A)

B)

C)

D)

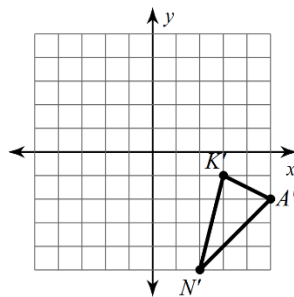_____21. Graph the image of the figure using the transformation given.
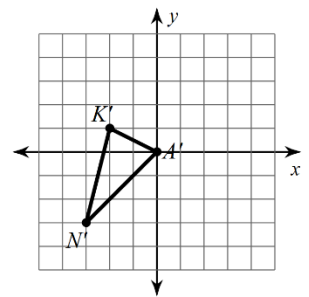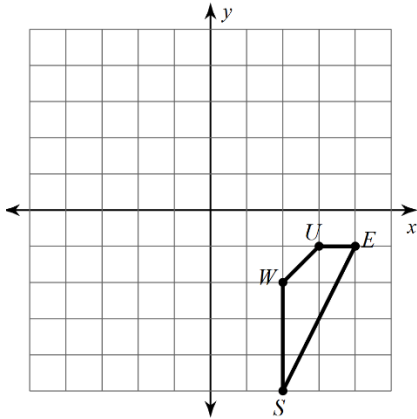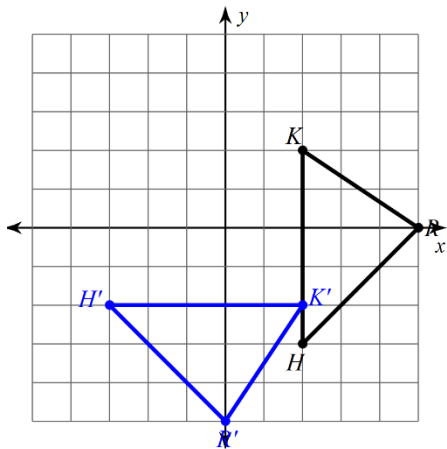
translation: $(2, -2)$

A)

B)

C)

D)

_____22. Find the coordinates of the vertices of each figure after the given transformation.

reflection across the y-axis

A) $S'(3, -5)$, $W'(3, -2)$, $U'(4, -1)$, $E'(5, -1)$

B) $W'(-2, -2)$, $U'(-3, -1)$, $E'(-4, -1)$, $S'(-2, -5)$

C) $S'(-5, -2)$, $W'(-2, -2)$, $U'(-1, -3)$, $E'(-1, -4)$

D) $S'(5, 2)$, $W'(2, 2)$, $U'(1, 3)$, $E'(1, 4)$

_____23. Write a rule to describe each transformation.

A) rotation 90° clockwise about the origin

B) rotation 90° counterclockwise about the origin

C) reflection across the x-axis

D) rotation 180° about the origin

_____24. The two quadrilaterals are similar. Find the scale factor of the smaller figure to the larger figure.
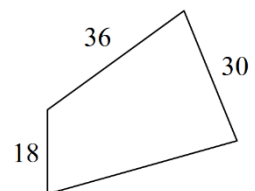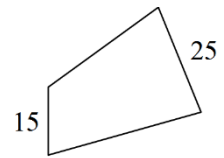
A) 5 : 6   B) 5 : 7

C) 1 : 7   D) 4 : 5

Given the functions below, perform the indicated operations.

____25. $w(t) = t^3 - 3t^2$; Find $w(-2)$

      A) -4 B) 6

      C) -20 D) 4

____26. $g(t) = t^2 + 3t$
      $f(t) = 2t - 3$
      Find $(g + f)(t)$

      A) $t^2 - 5t - 3$ B) $2t^3 + 3t^2 - 9t$

      C) $t^2 + 5t - 3$ D) $t^2 + 6t - 3$

____27. $g(t) = 2t + 3$
      $h(t) = -t - 4$
      Find $(g - h)(t)$

      A) $3t - 1$ B) $3t + 7$

      C) $3t - 7$ D) $-3t - 7$

____28. $f(x) = x + 1$
      $g(x) = x^2 - 2x$
      Find $(f \cdot g)(x)$

      A) $-x^3 - 2x$ B) $x^3 + 2x^2 - 2x$

      C) $x^3 - x^2 - 2x$ D) $x^3 + x^2 - 4x$

____29. $f(t) = t^2 - 2$
      $g(t) = t + 4$
      Find $\left(\dfrac{f}{g}\right)(t)$

      A) $\dfrac{-t^2 + 2}{t + 4}$ B) $\dfrac{-t + 4}{t^2 - 2}$

      C) $\dfrac{t + 4}{t^2 - 2}$ D) $\dfrac{t^2 - 2}{t + 4}$
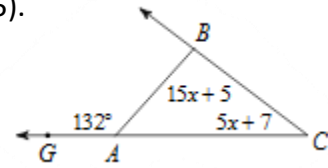
____30. $g(x) = 4x - 1$
      $h(x) = x^2 - 4x$
      Find $(g \circ h)(x)$

      A) $16x^2 - 24x + 5$ B) $4x^2 - 8x - 1$
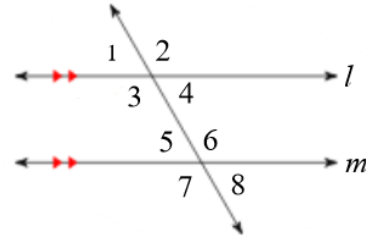
      C) $4x^2 - 16x - 1$ D) $2x^2 + 14$

_____31. Find the measure of angle $\angle ABC$. (Given $\angle ABC = 15x + 5$).

A) $85°$ B) $95°$

C) $71°$ D) $37°$

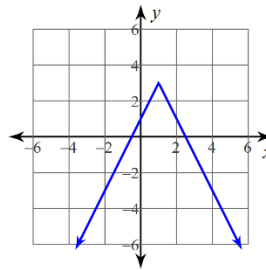_____32. Given $\angle 3 \cong \angle 6$, which theorem is needed to prove that lines *l* and *m* are parallel?

A) Alternate interior angles theorem
B) Same side interior angles theorem
C) Converse of the same side interior angles theorem
D) Corresponding angles theorem
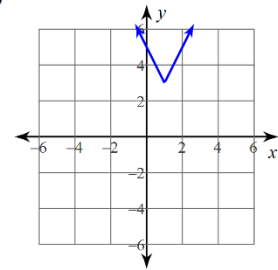E) Converse of the alternate interior angles theorem

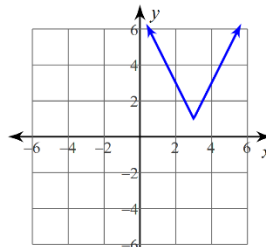_____33. Choose the graph that is represented by the following function.
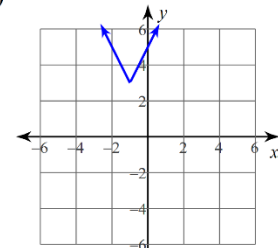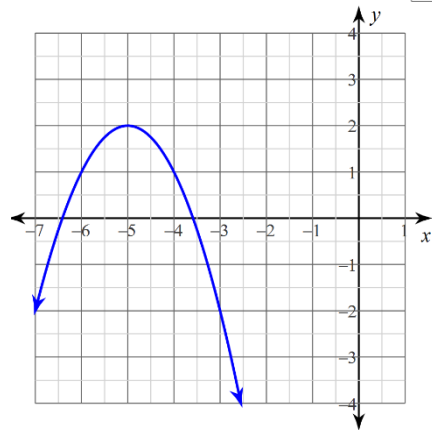
$$y = 2|x + 1| + 3$$

A)

B)

C)

D)

_____34.

A) $y = -(x + 5)^2 + 2$ B) $y = (x + 5)^2 - 2$
C) $y = -(x - 5)^2 - 2$ D) $y = -(x + 2)^2 + 2$

Answer
Key

1. C
2. B
3. C
4. A
5. B
6. D
7. D
8. C
9. A
10. B
11. A
12. C
13. A
14. D
15. B
16. A
17. D
18. B
19. A
20. A
21. D
22. B
23. A
24. A
25. C
26. C
27. B
28. C
29. D
30. C
31. B
32. E
33. D
34. A