Complete any five (5) pages.
Do more for extra credit!

Student Name: _____ Score:

Finding Square Root – Easy

$\sqrt{9} =$ ☐ $\sqrt{169} =$ ☐ $\sqrt{4} =$ ☐

$\sqrt{144} =$ ☐ $\sqrt{25} =$ ☐ $\sqrt{196} =$ ☐

$\sqrt{100} =$ ☐ $\sqrt{49} =$ ☐ $\sqrt{64} =$ ☐

$\sqrt{16} =$ ☐ $\sqrt{36} =$ ☐ $\sqrt{121} =$ ☐

Student Name: _____ Score:

Write in Simplest Form – Leave Exact Answer

E

$\sqrt{12} =$ ☐ $\sqrt{18} =$ ☐ $\sqrt{48} =$ ☐

$\sqrt{8} =$ ☐ $\sqrt{32} =$ ☐ $\sqrt{75} =$ ☐

$\sqrt{112} =$ ☐ $\sqrt{150} =$ ☐ $\sqrt{45} =$ ☐

$\sqrt{200} =$ ☐ $\sqrt{128} =$ ☐ $\sqrt{24} =$ ☐

$\sqrt{80} =$ ☐ $\sqrt{250} =$ ☐ $\sqrt{54} =$ ☐

Student Name: _____ Score:

Find Cube Root

$\sqrt[3]{8}$ = _____

$\sqrt[3]{1}$ = _____

$\sqrt[3]{64}$ = _____

$\sqrt[3]{125}$ = _____

$\sqrt[3]{27}$ = _____

$\sqrt[3]{343}$ = _____

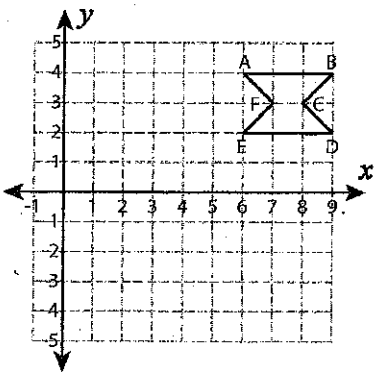
$\sqrt[3]{0}$ = _____

$\sqrt[3]{216}$ = _____

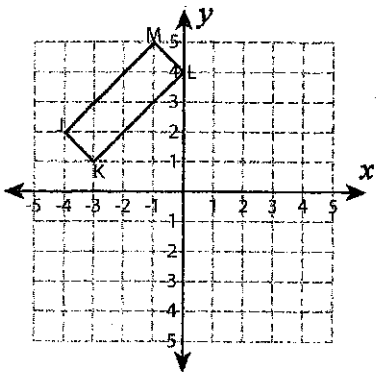
Reflect the Shapes

Graph the image of each shape after the given reflection.

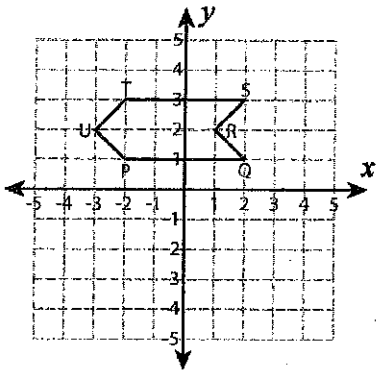
1) Reflection across the line x = 4



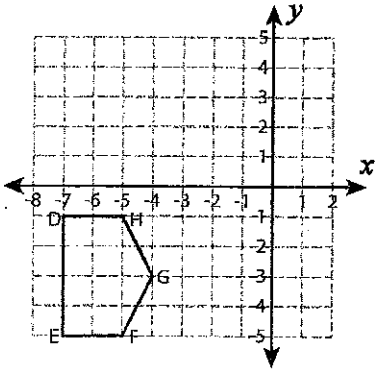
2) Reflection across the line y = x



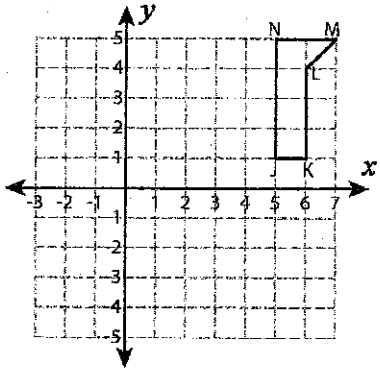
3) Reflection across the line y = –1



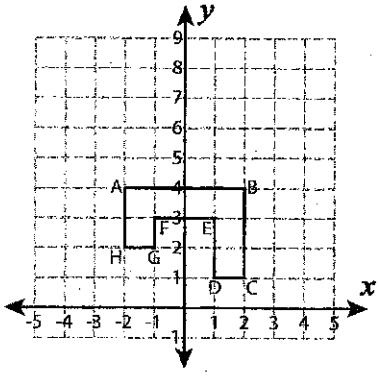
4) Reflection across the line x = –3



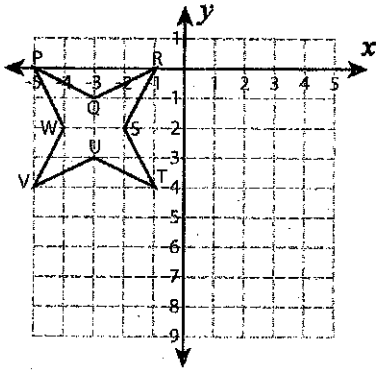
5) Reflection across the line x = 2



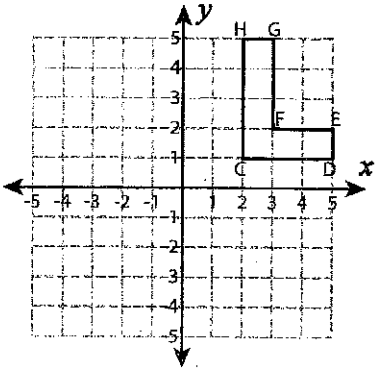
6) Reflection across the line y = 5



7) Reflection across the line y = –4



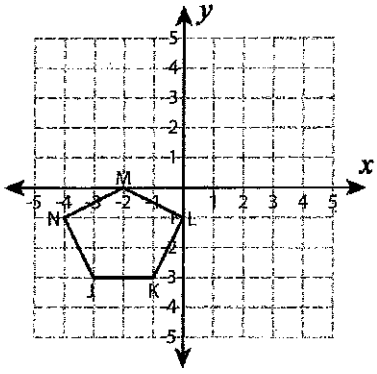
8) Reflection across the x-axis



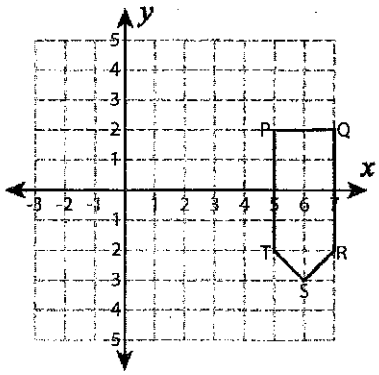
Reflect the Shapes

Graph the image of each shape after the given reflection.

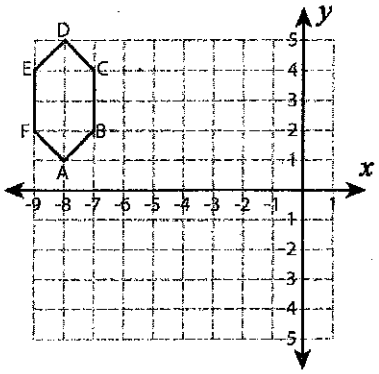
1) Reflection across the line $y = -x$



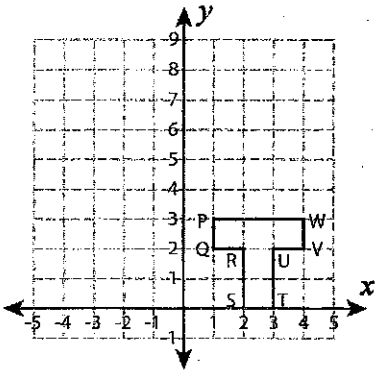
2) Reflection across the line $x = 3$



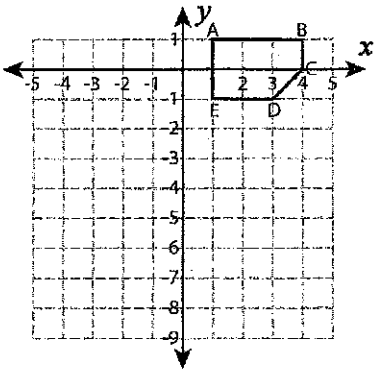
3) Reflection across the line $x = -6$



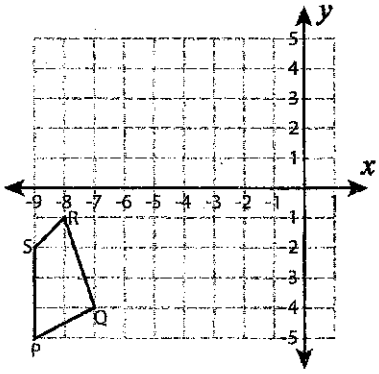
4) Reflection across the line $y = 4$



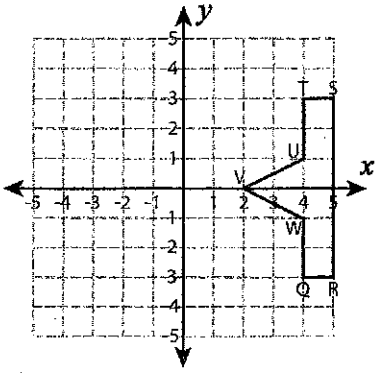
5) Reflection across the line $y = -3$



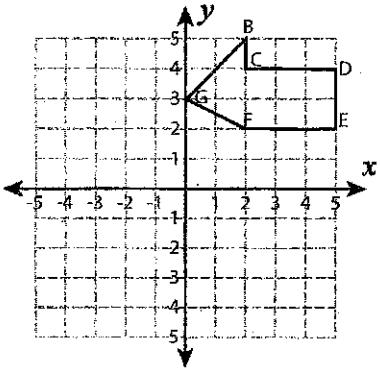
6) Reflection across the line $x = -5$



7) Reflection across the line $x = 1$



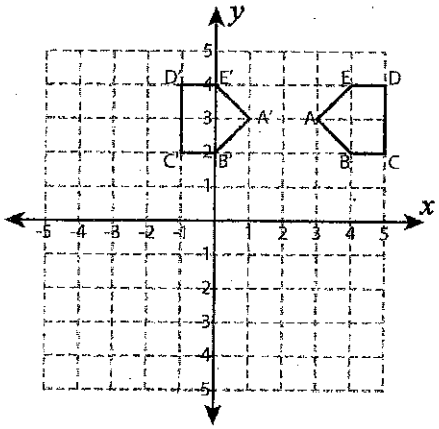
8) Reflection across the line $y = 2$



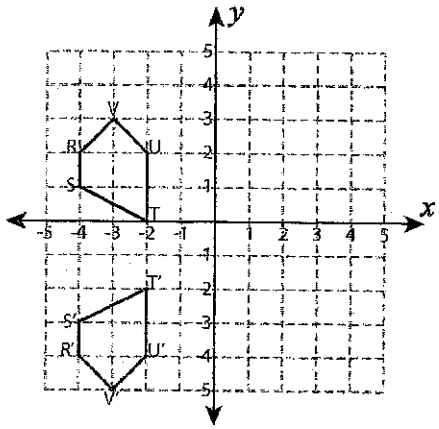
Reflection of Shapes

Write a rule to describe each reflection.

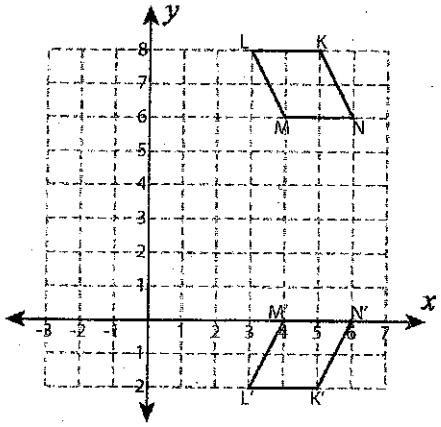
1)



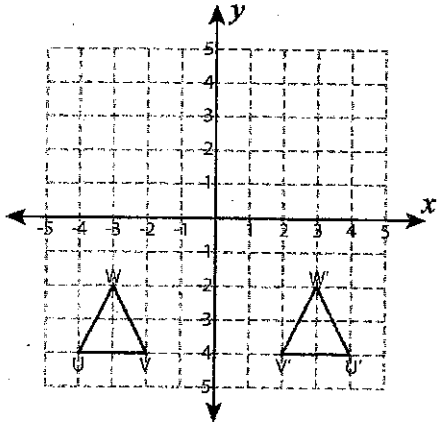
2)



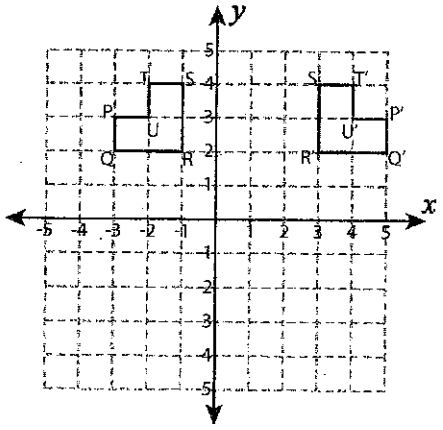
3)



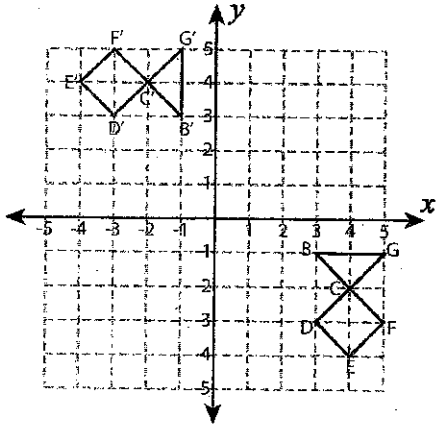
4)



5)



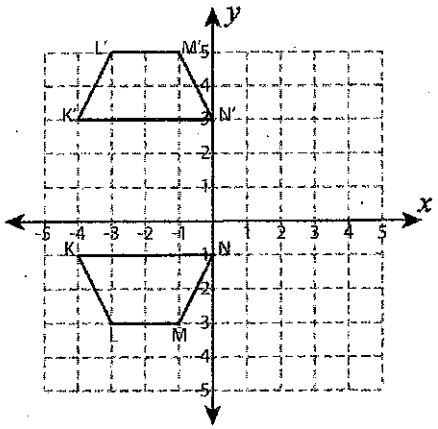
6)



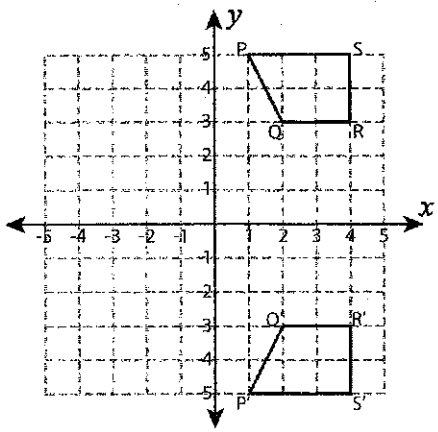
Reflection of Shapes

Write a rule to describe each reflection.

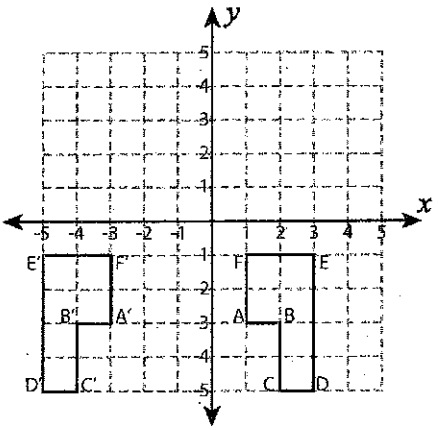
1)



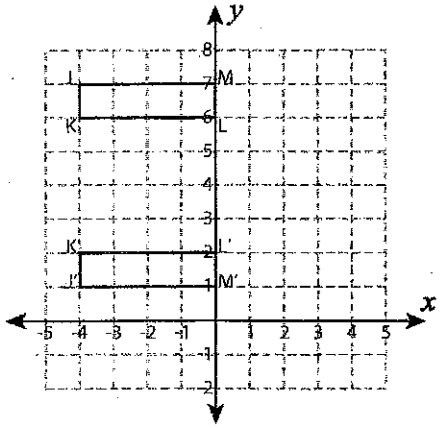
2)



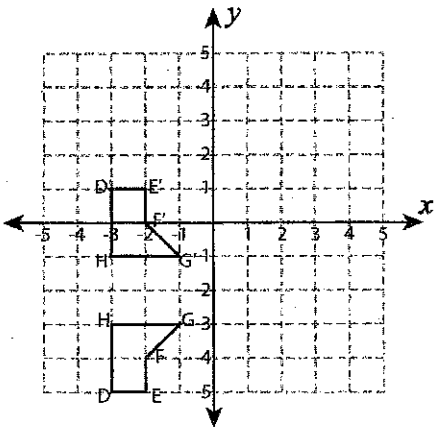
3)



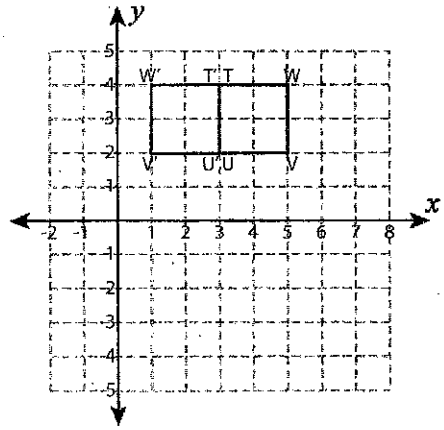
4)



5)



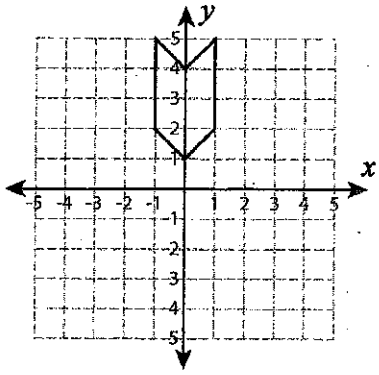
6)



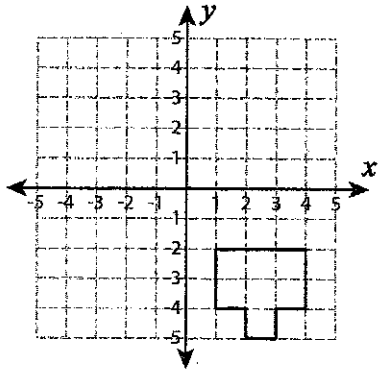
Rotate the Shapes

Graph the image of each shape after rotating it about the origin.

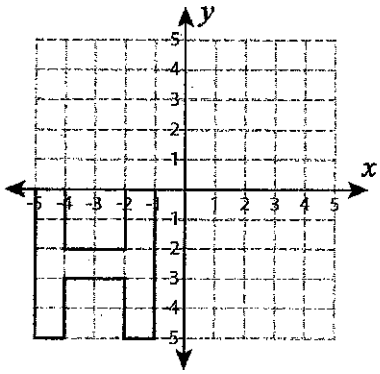
1) 180^0 rotation



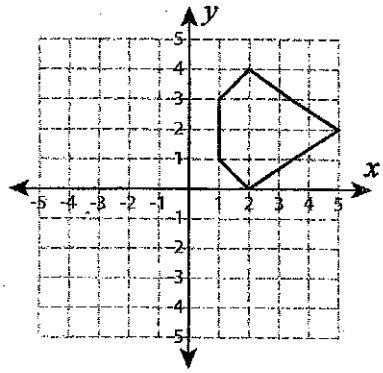
2) 90^0 clockwise rotation



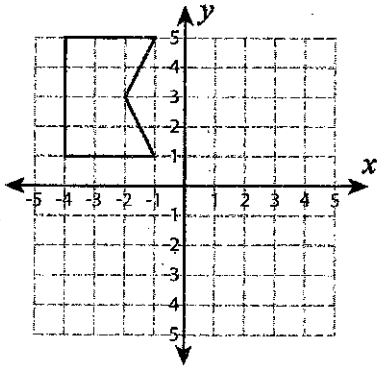
3) 90^0 counterclockwise rotation



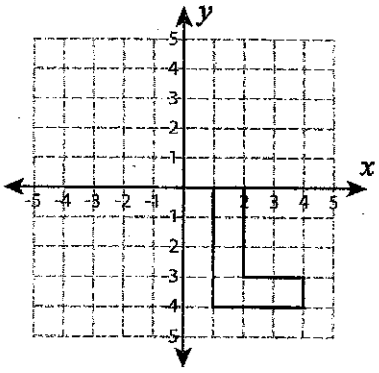
4) 180^0 rotation



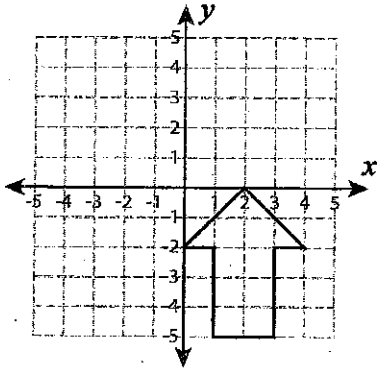
5) 90^0 clockwise rotation



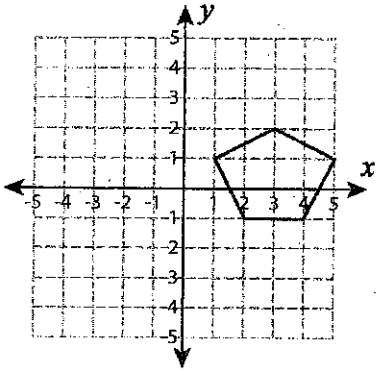
6) 90^0 counterclockwise rotation



7) 180^0 rotation



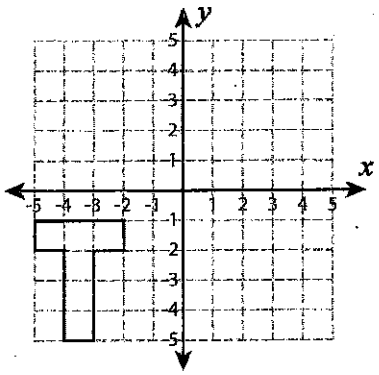
8) 90^0 clockwise rotation



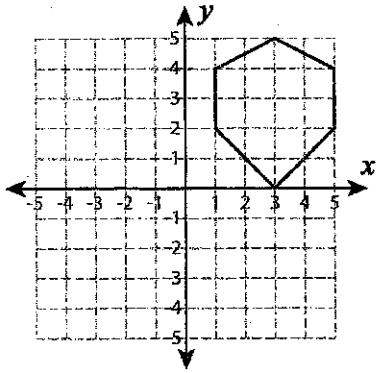
Rotate the Shapes

Graph the image of each shape after rotating it about the origin.

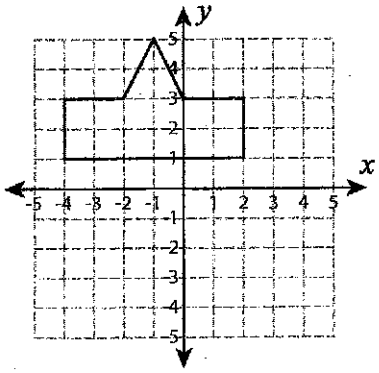
1) 90^0 counterclockwise rotation



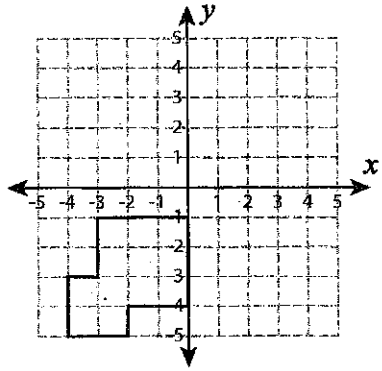
2) 180^0 rotation



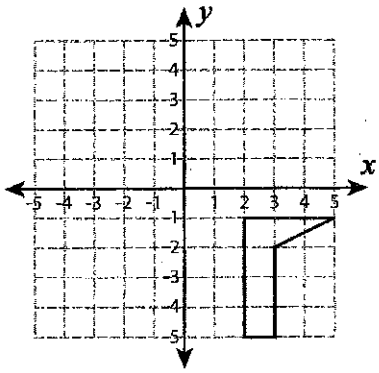
3) 90^0 clockwise rotation



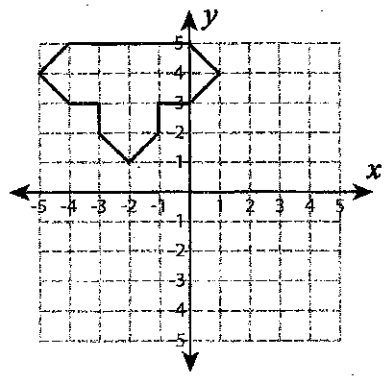
4) 90^0 counterclockwise rotation



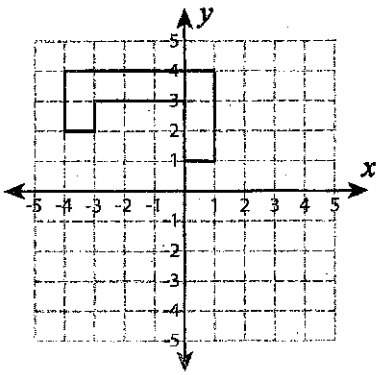
5) 180^0 rotation



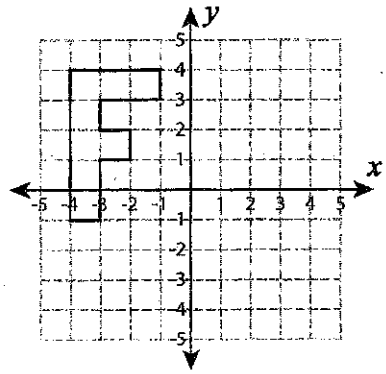
6) 90^0 clockwise rotation



7) 90^0 counterclockwise rotation



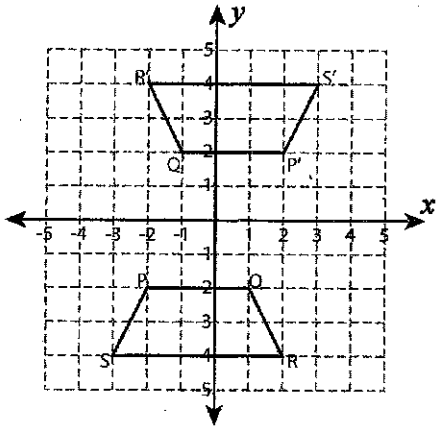
8) 180^0 rotation



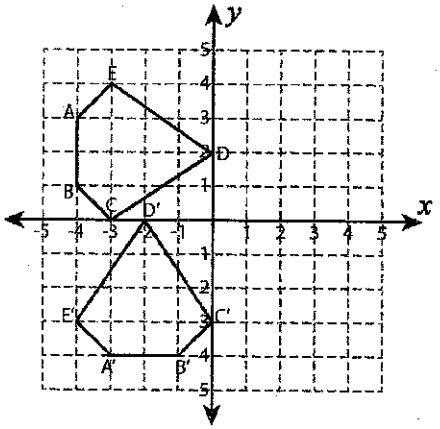
Rotation of Shapes

Write a rule to describe each rotation.

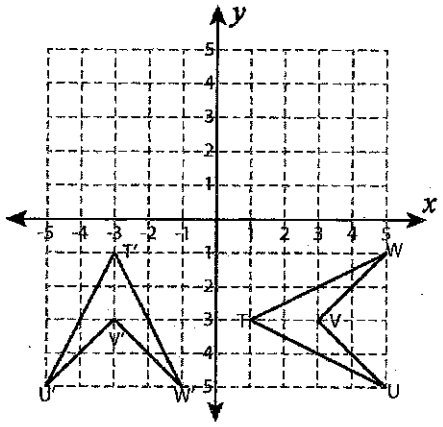
1)



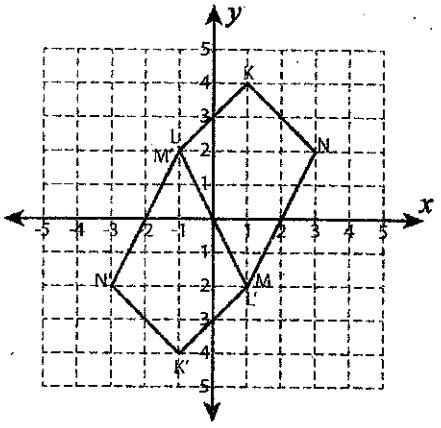
2)



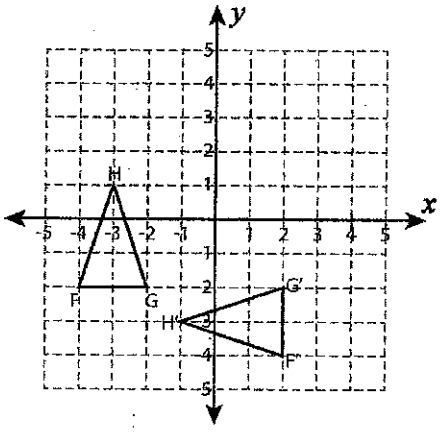
3)



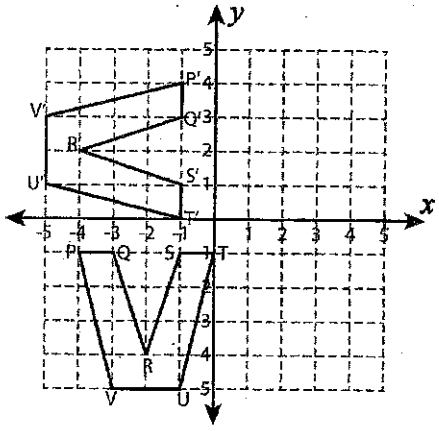
4)



5)



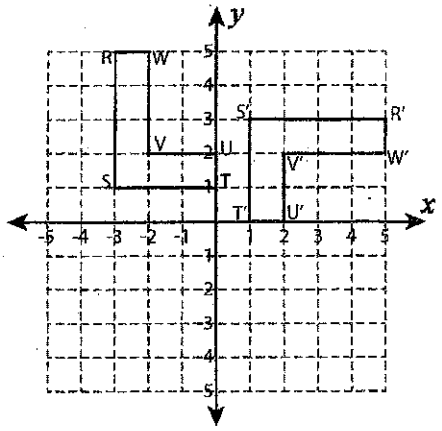
6)



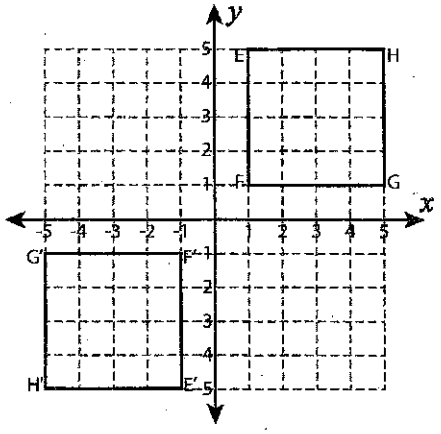
Rotation of Shapes

Write a rule to describe each rotation.

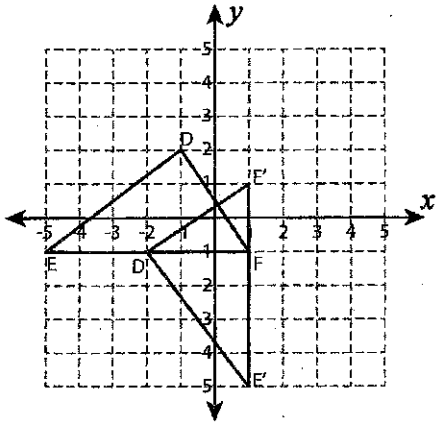
1)



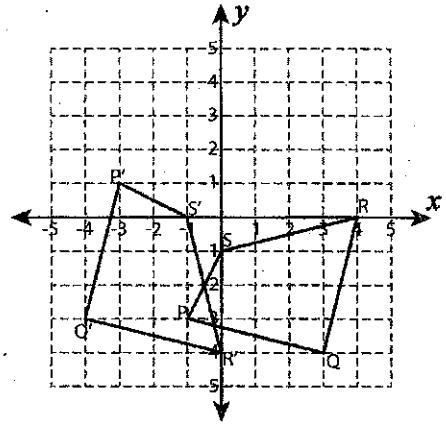
2)



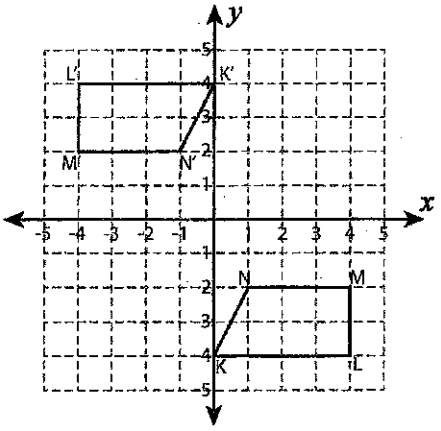
3)



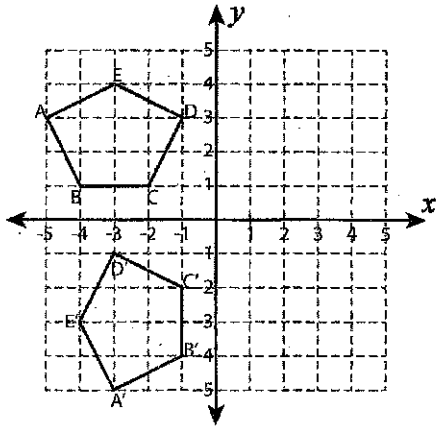
4)



5)



6)



Name: _____ Score:

Product Rule

Pre-algebra: E

Use product rule and rewrite each expression as single exponent.

1) $11^2 \times 11^{10}$

2) $13^6 \times 13^4$

3) $14^9 \times 14^{10}$

4) $2^4 \times 2^4$

5) $7^8 \times 7^6$

6) $3^3 \times 3^9$

7) $17^7 \times 17^9$

8) $5^3 \times 5^6$

9) $16^2 \times 16^4$

10) $18^6 \times 18^3$

11) $9^5 \times 9^9$

12) $8^7 \times 8^3$

13) $12^6 \times 12^7$

14) $17^8 \times 17^9$

15) $5^4 \times 5^2$

16) $3^2 \times 3^2$

17) $19^4 \times 19^8$

18) $20^4 \times 20^5$

19) $4^3 \times 4^4$

20) $6^7 \times 6^2$

21) $10^{10} \times 10^5$

Name: _____ Score:

Quotient Rule

Pre-algebra: E

Use quotient rule and rewrite each expression as single exponent.

1) $10^{10} \div 10^{3}$

2) $7^{10} \div 7^{9}$

3) $18^{9} \div 18^{3}$

4) $12^{5} \div 12^{2}$

5) $15^{10} \div 15^{4}$

6) $17^{7} \div 17^{5}$

7) $4^{9} \div 4^{8}$

8) $20^{8} \div 20^{5}$

9) $14^{5} \div 14^{3}$

10) $16^{6} \div 16^{3}$

11) $11^{9} \div 11^{7}$

12) $6^{9} \div 6^{3}$

13) $9^{10} \div 9^{4}$

14) $5^{9} \div 5^{4}$

15) $13^{7} \div 13^{6}$

16) $19^{9} \div 19^{2}$

17) $2^{4} \div 2^{2}$

18) $8^{6} \div 8^{2}$

19) $3^{6} \div 3^{4}$

20) $15^{10} \div 15^{5}$

21) $18^{10} \div 18^{4}$

Name: _____ Score:

Power Rule

Pre-algebra: E

Use power rule and rewrite each expression as single exponent.

1) $(10^2)^9$

2) $(2^7)^6$

3) $(13^5)^5$

4) $(7^7)^5$

5) $(11^6)^7$

6) $(2^{10})^6$

7) $(9^6)^4$

8) $(6^9)^2$

9) $(3^7)^8$

10) $(7^9)^8$

11) $(20^2)^7$

12) $(18^3)^6$

13) $(8^8)^3$

14) $(14^3)^2$

15) $(17^4)^6$

16) $(19^6)^5$

17) $(6^7)^8$

18) $(18^{10})^3$

19) $(12^8)^8$

20) $(19^5)^{10}$

21) $(14^3)^8$