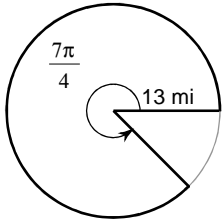


Assignment

© 2013 Kuta Software LLC. All rights reserved.

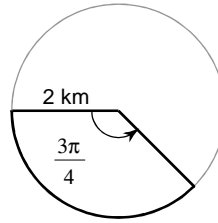
Find the area of each sector.

1)



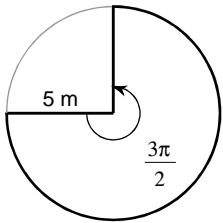
- A) $\frac{81\pi}{8} \text{ mi}^2$ B) $\frac{7\pi}{3} \text{ mi}^2$
 C) $\frac{1183\pi}{8} \text{ mi}^2$ D) $53235\pi \text{ mi}^2$

2)



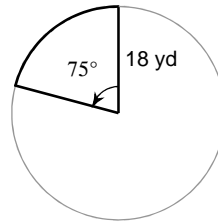
- A) $32\pi \text{ km}^2$ B) $\frac{5\pi}{2} \text{ km}^2$
 C) $\frac{25\pi}{8} \text{ km}^2$ D) $\frac{3\pi}{2} \text{ km}^2$

3)



- A) $\frac{75\pi}{4} \text{ m}^2$ B) $\frac{34\pi}{3} \text{ m}^2$
 C) $2700\pi \text{ m}^2$ D) $\frac{15\pi}{2} \text{ m}^2$

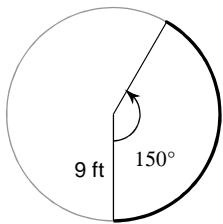
4)



- A) $\frac{135\pi}{2} \text{ yd}^2$ B) $\frac{128\pi}{3} \text{ yd}^2$
 C) $138\pi \text{ yd}^2$ D) $\frac{15\pi}{2} \text{ yd}^2$

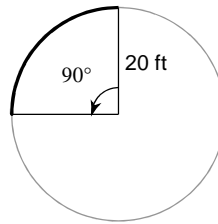
Find the length of each arc.

5)



- A) $\frac{17\pi}{12} \text{ ft}$ B) $2700\pi \text{ ft}$
 C) $11\pi \text{ ft}$ D) $\frac{15\pi}{2} \text{ ft}$

6)



- A) $100\pi \text{ ft}$ B) $49\pi \text{ ft}$
 C) $10\pi \text{ ft}$ D) $64\pi \text{ ft}$

Use the information provided to write the general conic form equation of each circle.

7) Center: $(-12, 0)$ Point on Circle: $(-19, 0)$

- A) $-x^2 + y^2 + 24x + 95 = 0$
 B) $x^2 - y^2 + 23x + 95 = 0$
 C) $x^2 + y^2 + 24x - 2257 = 0$
 D) $x^2 + y^2 + 24x + 95 = 0$

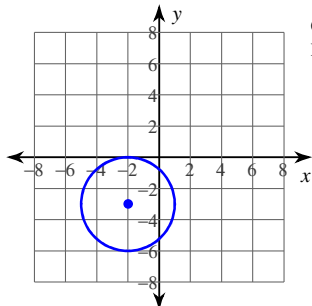
8) Center: $(-17, 6)$ Point on Circle: $(-19, 6)$

- A) $x^2 + y^2 + 30x + 12y + 257 = 0$
 B) $x^2 + y^2 - 34x - 10y + 310 = 0$
 C) $x^2 + y^2 + 34x - 12y + 321 = 0$
 D) $x^2 - 3y^2 + 38x - 12y - 323 = 0$

Identify the center and radius of each. Then sketch the graph.

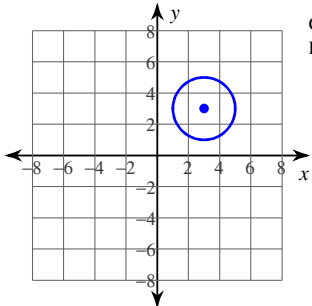
9) $x^2 + y^2 - 6x + 6y + 9 = 0$

A)



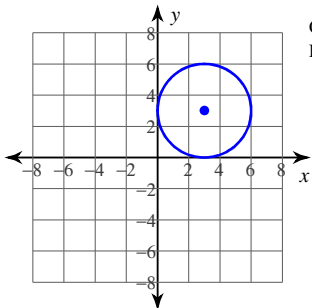
Center: $(-2, -3)$
Radius: 3

B)



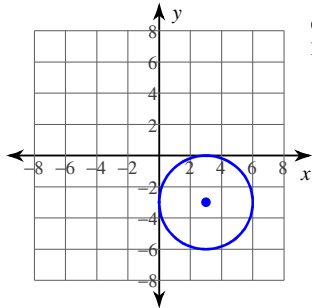
Center: $(3, 3)$
Radius: 2

C)



Center: $(3, 3)$
Radius: 3

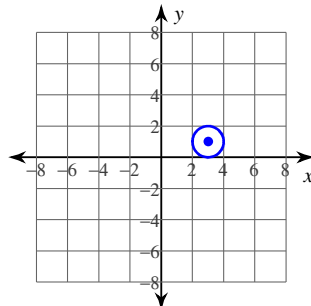
D)



Center: $(3, -3)$
Radius: 3

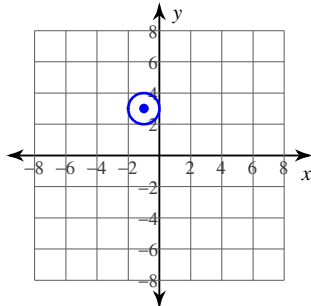
10) $x^2 + y^2 - 6x - 2y + 9 = 0$

A)



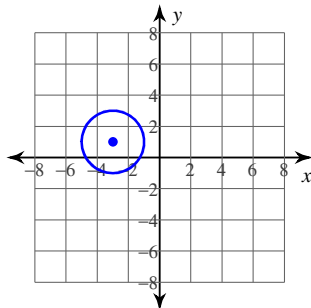
Center: $(3, 1)$
Radius: 1

B)



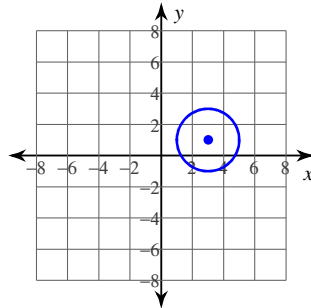
Center: $(-1, 3)$
Radius: 1

C)



Center: $(-3, 1)$
Radius: 2

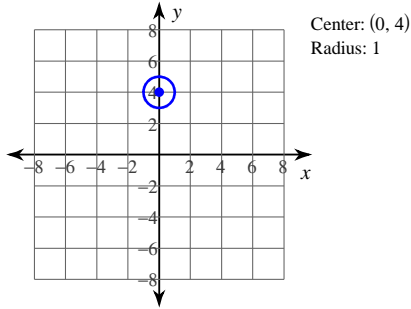
D)



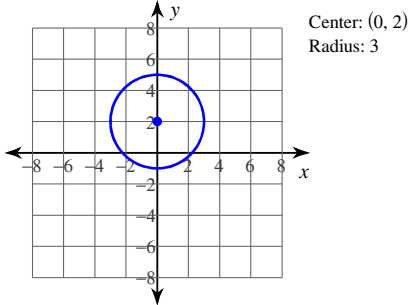
Center: $(3, 1)$
Radius: 2

11) $x^2 + y^2 - 8y + 7 = 0$

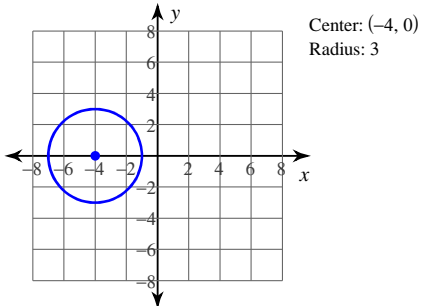
A)



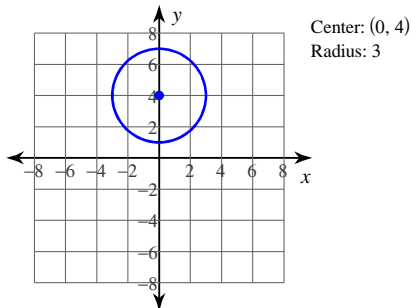
B)



C)



D)



Find the value that completes the square and then rewrite as a perfect square.

12) $p^2 + 21p + \underline{\hspace{1cm}}$

A) $\frac{169}{4}; \left(p + \frac{13}{2}\right)^2$

B) $\frac{21}{2}; \left(p + \frac{21}{2}\right)^2$

C) $\frac{81}{4}; \left(p + \frac{9}{2}\right)^2$

D) $\frac{441}{4}; \left(p + \frac{21}{2}\right)^2$

13) $z^2 - 7z + \underline{\hspace{1cm}}$

A) $\frac{121}{4}; \left(z + \frac{11}{2}\right)^2$

B) $\frac{49}{4}; \left(z - \frac{7}{2}\right)^2$

C) $\frac{1}{64}; \left(z + \frac{1}{8}\right)^2$

D) $49; \left(z - \frac{7}{2}\right)^2$

14) $x^2 + 6x + \underline{\hspace{1cm}}$

- A) 9; $(x + 3)^2$
 B) 3; $(x + 3)^2$
 C) -9; $(x + 3)^2$
 D) 36; $(x + 3)^2$

15) $a^2 + 12a + \underline{\hspace{1cm}}$

- A) 144; $(a - 12)^2$
 B) 36; $(a + 6)^2$
 C) 6; $(a + 6)^2$
 D) 144; $(a + 6)^2$

16) $n^2 + 16n + \underline{\hspace{1cm}}$

- A) 64; $(n + 8)^2$
 B) 400; $(n + 20)^2$
 C) 8; $(n + 8)^2$
 D) 289; $(n - 17)^2$

17) $x^2 + 26x + \underline{\hspace{1cm}}$

- A) -169; $(x + 13)^2$
 B) 64; $(x - 8)^2$
 C) 13; $(x + 13)^2$
 D) 169; $(x + 13)^2$

Solve each equation by completing the square.

18) $r^2 - 14r - 48 = -4$

- A) $\{3, -1\}$
 B) $\{7 + \sqrt{93}, 7 - \sqrt{93}\}$
 C) $\{-2 + 2\sqrt{3}, -2 - 2\sqrt{3}\}$
 D) $\{2, -4\}$

19) $3n^2 - 6n - 66 = 6$

- A) $\{6, -4\}$
 B) $\{8 + 2\sqrt{31}, 8 - 2\sqrt{31}\}$
 C) $\{10, 6\}$
 D) $\left\{\frac{3}{2}, -\frac{7}{2}\right\}$

20) $2m^2 + 8m - 32 = 10$

- A) $\{-4 + \sqrt{58}, -4 - \sqrt{58}\}$
 B) $\{2, -6\}$
 C) $\{-4 + \sqrt{37}, -4 - \sqrt{37}\}$
 D) $\{3, -7\}$

21) $x^2 + 16x + 38 = 3$

- A) $\{4, -2\}$
 B) $\{3, -13\}$
 C) $\{-7 + 2\sqrt{6}, -7 - 2\sqrt{6}\}$
 D) $\{-8 + \sqrt{29}, -8 - \sqrt{29}\}$

Simplify.

22) $-\frac{8}{6i}$

- A) $\frac{5i}{3}$ B) $\frac{4i}{3}$
 C) $\frac{3i}{2}$ D) $\frac{7i}{6}$

23) $\frac{-8}{-i}$

- A) $-8i$ B) $-7i$
 C) $-9i$ D) $-5i$

24) $\frac{4 - \sqrt{5}}{\sqrt{34}}$

- A) $\frac{2\sqrt{34}}{17}$
 B) $\frac{7 - \sqrt{5}}{6}$
 C) $\frac{2\sqrt{34} - \sqrt{170}}{17}$
 D) $\frac{4\sqrt{34} - \sqrt{170}}{34}$

25) $\frac{\sqrt{2}}{9\sqrt{6}}$

- A) $\frac{\sqrt{3}}{18}$ B) $\frac{\sqrt{3}}{27}$
 C) $\frac{\sqrt{6}}{27}$ D) $\frac{\sqrt{14}}{63}$

26) $\frac{\sqrt{2}}{\sqrt{7}}$

A) $\frac{2\sqrt{7}}{7}$

B) $\frac{\sqrt{14}}{7}$

C) $\frac{\sqrt{21}}{7}$

D) $\frac{\sqrt{3}}{3}$

28) $(-1 + 8i)(1 - 8i)$

A) $-63 - 16i$

B) $63 + 16i$

C) $-63 + 16i$

D) -65

30) $-4(-2 - 7i) + (6i)(-5 + 6i)$

A) $34i$

B) $-44 - 58i$

C) $-28 - 2i$

D) $-28 + 10i$

32) $-8 - 2 \cdot (6i)$

A) $-8 - 12i$

B) $-8 + 12i$

C) -18

D) -16

34) $(6i)(-8i) - (5i)$

A) $-47i$

B) 48

C) $-48 - 5i$

D) $48 - 5i$

36) $(7 + 6i) + (3 + 4i)$

38) $(-i)(6i)(8 + 8i)$

40) $\frac{4i}{4 + 9i}$

A) $\frac{16i + 36}{97}$

B) $\frac{1 - 3i}{5}$

C) $\frac{4i}{15}$

D) $\frac{4 - 6i}{13}$

42) $\frac{9i}{3 - 5i}$

A) $\frac{9i - 45}{26}$

B) $\frac{18 + 30i}{17}$

C) $\frac{27i - 45}{34}$

D) $\frac{15 + 25i}{17}$

44) $\frac{2}{6 + 2\sqrt{10}}$

A) $\frac{18 - 4\sqrt{10}}{41}$

B) $\frac{3 - \sqrt{10}}{2}$

C) $\frac{-3 + \sqrt{11}}{4}$

D) $-3 + \sqrt{10}$

27) $(4i)(-4 - 5i) - (i)(-7i)$

A) $13 - 16i$

B) $-15 - 10i$

C) $-16 - 13i$

D) $-27 - 16i$

29) $(-5 - 8i)^2$

A) 144

B) $-48 + 64i$

C) $-39 - 80i$

D) $-39 + 80i$

31) $(7 - 6i)(-2 - i)$

A) $-8 - 19i$

B) $-8 + 19i$

C) $-20 + 5i$

D) $-20 - 5i$

33) $6(-i) - (6i)$

A) $-12i$

B) $-7 - 6i$

C) $-6i$

D) $12i$

35) $(-4 + 5i) + (4 + 2i)$

37) $(-7 - 2i) - (1 + 5i)$

39) $(8i)(8 + 4i) + (8i)(7 + 8i)$

41) $\frac{6}{-4i}$

A) $\frac{7i}{4}$

B) $\frac{3i}{2}$

C) $-\frac{3i}{4}$

D) $2i$

43) $\frac{\sqrt{6}}{\sqrt{7}}$

A) $\frac{\sqrt{42}}{7}$

B) $\frac{\sqrt{30}}{5}$

C) $\frac{2\sqrt{7}}{7}$

D) $\frac{\sqrt{21}}{7}$

45) $-\frac{2}{\sqrt{3} - 5}$

A) $\frac{2\sqrt{3} + 40}{397}$

B) $\frac{\sqrt{3} + 15}{111}$

C) $\frac{\sqrt{3} + 5}{11}$

D) $\frac{2\sqrt{3} + 10}{11}$

- 46) $\frac{6}{3\sqrt{6} + \sqrt{3}}$
- A) $\frac{18\sqrt{6} - 6\sqrt{5}}{49}$
- B) $\frac{6\sqrt{6} - 2\sqrt{3}}{17}$
- C) $\frac{10\sqrt{6} - 2\sqrt{3}}{49}$
- D) $\frac{4\sqrt{6} - 2\sqrt{3}}{7}$

Use the information provided to write the standard form equation of each circle.

- 47) Center: $(-12, -10)$
Radius: 2

- A) $(x + 12)^2 + (y - 10)^2 = 4$
 B) $(x + 12)^2 + (y + 10)^2 = 4$
 C) $(x - 9)^2 + (y + 10)^2 = 16$
 D) $(x - 11)^2 + (y - 13)^2 = 4$

- 48) Center: $(-10, 11)$
Radius: $\sqrt{62}$

- A) $(x + 10)^2 + (y - 11)^2 = 62$
 B) $(x - 11)^2 + (y - 10)^2 = 62$
 C) $(x + 11)^2 + (y - 11)^2 = 62$
 D) $(x - 11)^2 + (y + 13)^2 = 9$

Use the information provided to write the general conic form equation of each circle.

- 49) Center: $(13, -8)$
Radius: $3\sqrt{3}$

- A) $x^2 + y^2 + 22x - 20y - 508 = 0$
 B) $x^2 + y^2 - 18x - 28y + 250 = 0$
 C) $x^2 - 206 - 26x + 20y = 0$
 D) $x^2 + y^2 - 26x + 16y + 206 = 0$

- 50) Center: $(4, 6)$
Radius: 6

- A) $-3x^2 - 5y^2 - 8x - 12y + 16 = 0$
 B) $x^2 + y^2 - 8x - 12y + 16 = 0$
 C) $x^2 + 2y^2 - 8x - 10y + 12 = 0$
 D) $-2x^2 + y^2 - 8x - 12y + 17 = 0$

- 51) Center: $(16, 13)$
Radius: 3

- A) $x^2 + y^2 - 32x + 26y + 416 = 0$
 B) $x^2 + y^2 + 32x - 30y + 416 = 0$
 C) $x^2 + y^2 - 32x - 26y + 416 = 0$
 D) $x^2 + y^2 - 32x - 26y + 424 = 0$

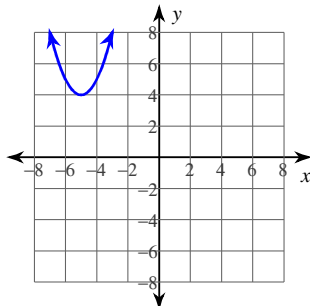
- 52) Center: $(2, -15)$
Radius: 4

- A) $-3x^2 + y^2 - 4x + 30y + 213 = 0$
 B) $x^2 + y^2 - 4x + 30y + 213 = 0$
 C) $x^2 + y^2 - 4x + 30y - 27 = 0$
 D) $x^2 + y^2 - 30x + 4y + 213 = 0$

Identify the vertex and axis of symmetry of each. Then sketch the graph.

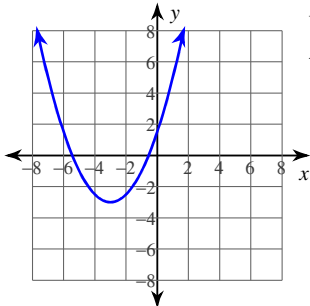
53) $y = 2x^2 + 20x + 46$

A)



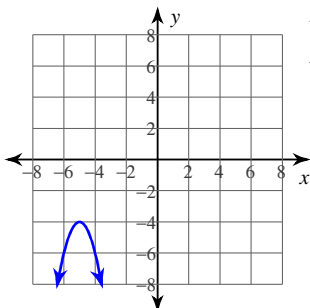
Vertex: $(-5, 4)$
Axis of Sym.: $x = -5$

B)



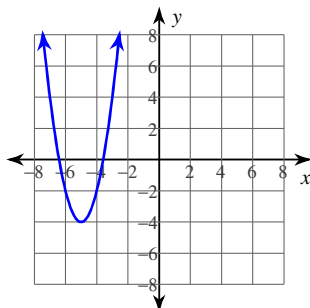
Vertex: $(-3, -3)$
Axis of Sym.: $x = -3$

C)



Vertex: $(-5, -4)$
Axis of Sym.: $x = -5$

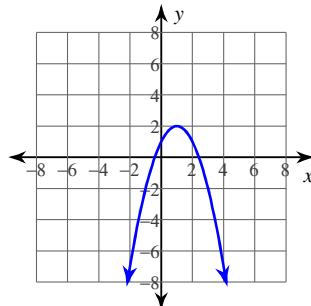
D)



Vertex: $(-5, -4)$
Axis of Sym.: $x = -5$

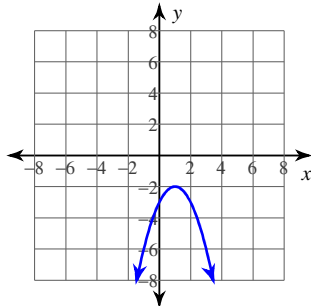
54) $y = -x^2 + 2x - 3$

A)



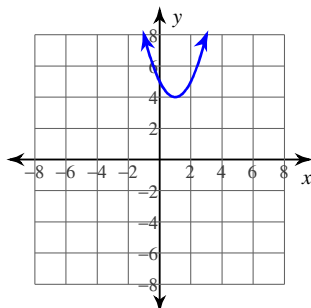
Vertex: $(1, 2)$
Axis of Sym.: $x = 1$

B)



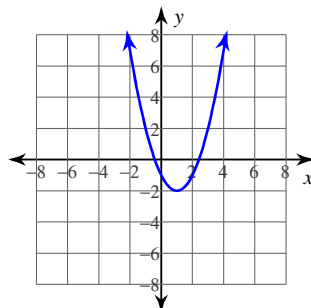
Vertex: $(1, -2)$
Axis of Sym.: $x = 1$

C)



Vertex: $(1, 4)$
Axis of Sym.: $x = 1$

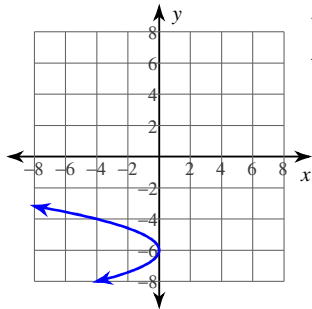
D)



Vertex: $(1, -2)$
Axis of Sym.: $x = 1$

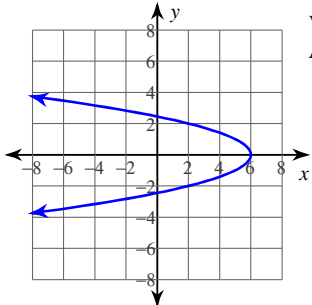
55) $x = -y^2 + 6$

A)



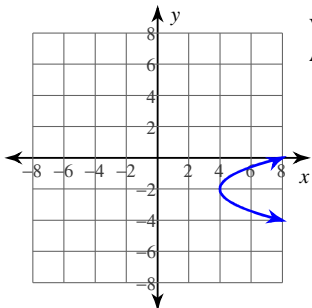
Vertex: (0, -6)
Axis of Sym.: $y = -6$

B)



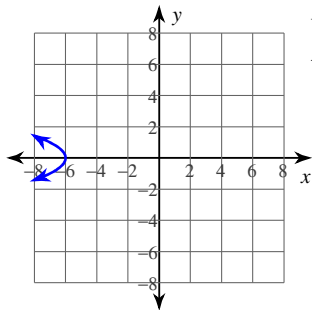
Vertex: (6, 0)
Axis of Sym.: $y = 0$

C)



Vertex: (4, -2)
Axis of Sym.: $y = -2$

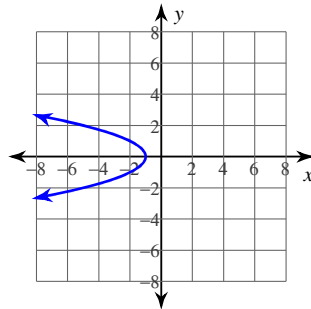
D)



Vertex: (-6, 0)
Axis of Sym.: $y = 0$

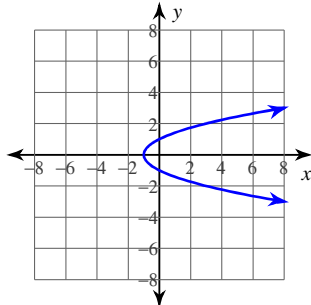
56) $x = -y^2 + 1$

A)



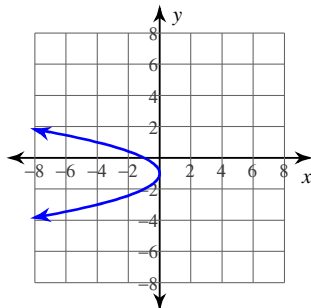
Vertex: (-1, 0)
Axis of Sym.: $y = 0$

B)



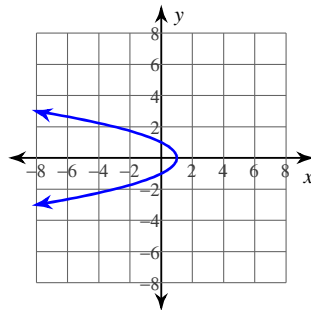
Vertex: (-1, 0)
Axis of Sym.: $y = 0$

C)



Vertex: (0, -1)
Axis of Sym.: $y = -1$

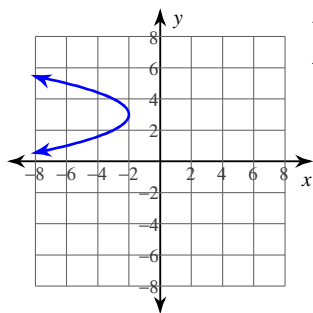
D)



Vertex: (1, 0)
Axis of Sym.: $y = 0$

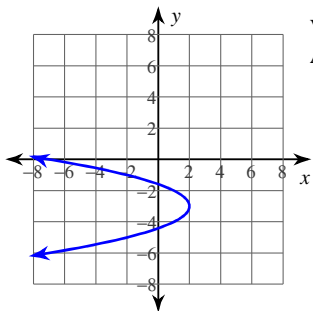
$$57) x = (y - 3)^2 - 2$$

A)



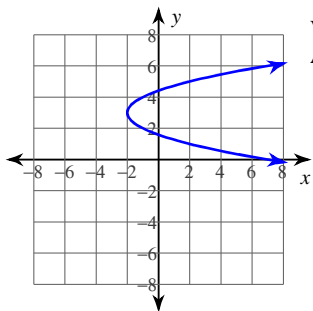
Vertex: $(-2, 3)$
Axis of Sym.: $y = 3$

B)



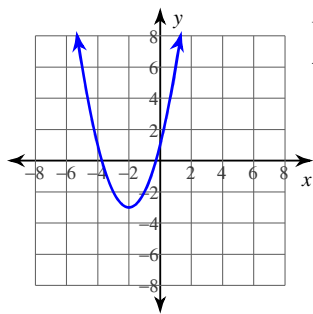
Vertex: $(2, -3)$
Axis of Sym.: $y = -3$

C)



Vertex: $(-2, 3)$
Axis of Sym.: $y = 3$

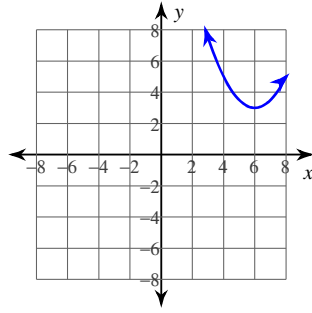
D)



Vertex: $(-2, -3)$
Axis of Sym.: $x = -2$

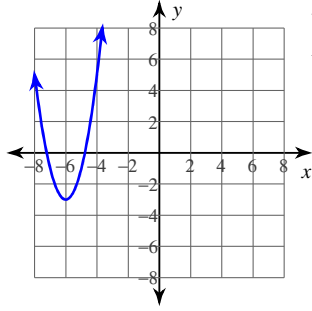
$$58) -2x^2 - 24x + y - 69 = 0$$

A)



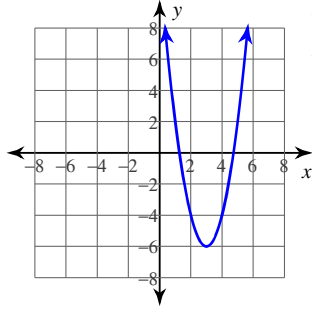
Vertex: $(6, 3)$
Axis of Sym.: $x = 6$

B)



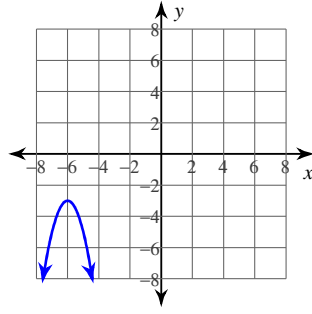
Vertex: $(-6, -3)$
Axis of Sym.: $x = -6$

C)



Vertex: $(3, -6)$
Axis of Sym.: $x = 3$

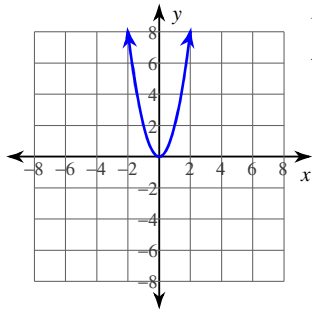
D)



Vertex: $(-6, -3)$
Axis of Sym.: $x = -6$

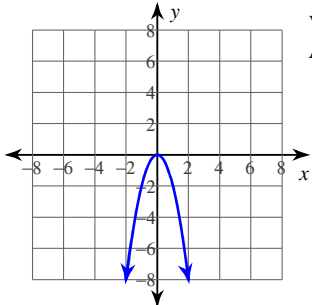
59) $-2x^2 + y = 0$

A)



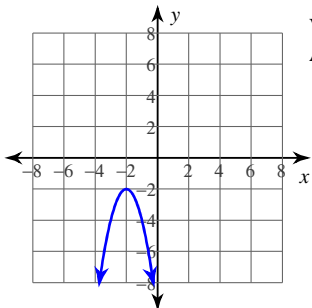
Vertex: (0, 0)
Axis of Sym.: $x = 0$

B)



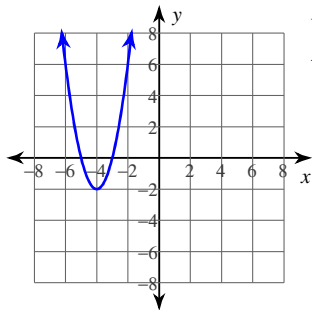
Vertex: (0, 0)
Axis of Sym.: $x = 0$

C)



Vertex: (-2, -2)
Axis of Sym.: $x = -2$

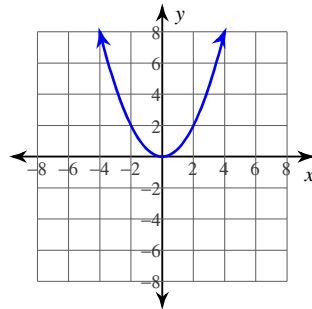
D)



Vertex: (-4, -2)
Axis of Sym.: $x = -4$

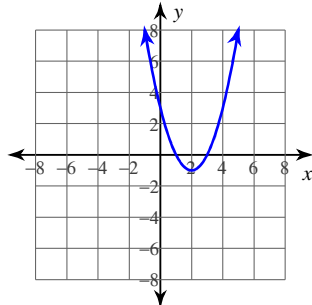
60) $x^2 + y = 0$

A)



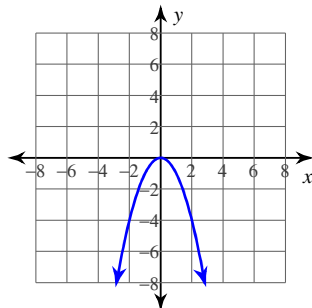
Vertex: (0, 0)
Axis of Sym.: $x = 0$

B)



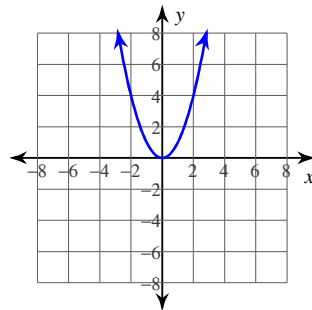
Vertex: (2, -1)
Axis of Sym.: $x = 2$

C)



Vertex: (0, 0)
Axis of Sym.: $x = 0$

D)

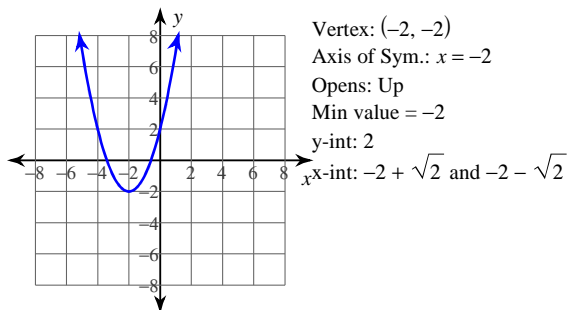


Vertex: (0, 0)
Axis of Sym.: $x = 0$

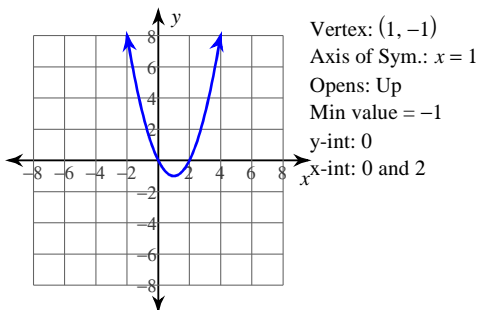
Identify the vertex, axis of symmetry, direction of opening, min/max value, intercepts on the axis parallel to the axis of symmetry, and intercepts on the axis perpendicular to the axis of symmetry of each. Then sketch the graph.

61) $x^2 + y = 0$

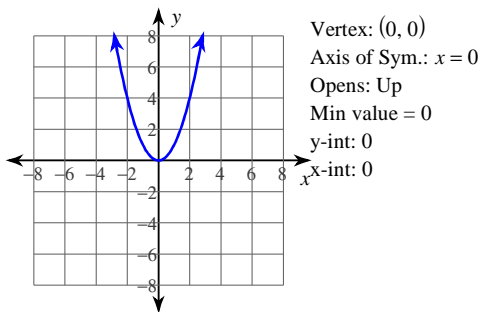
A)



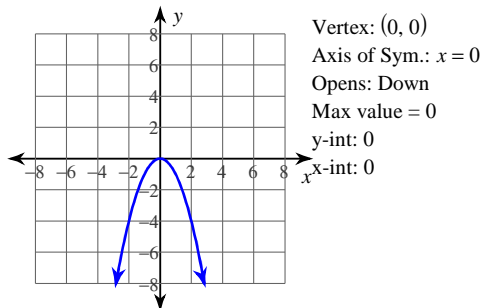
B)



C)

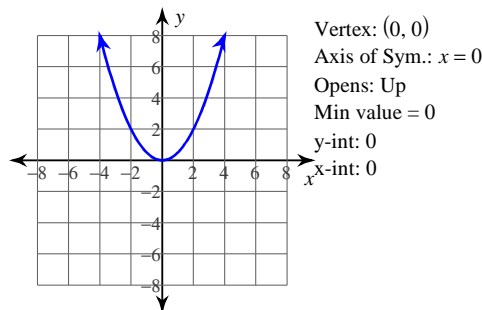


D)

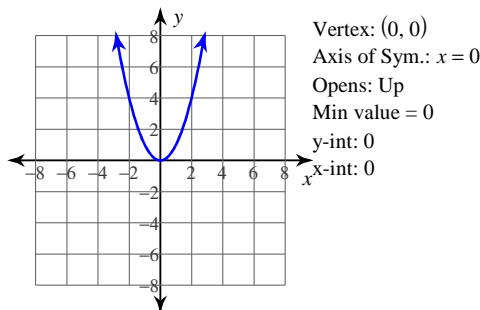


62) $-2x^2 + y = 0$

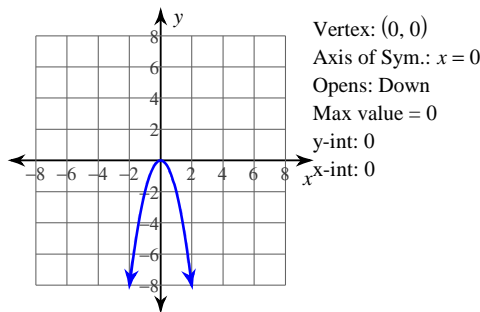
A)



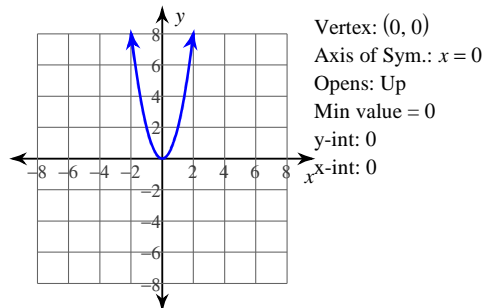
B)



C)



D)



Use the information provided to write the standard form equation of each parabola.

63) Vertex: $(-9, -7)$, Focus: $(-\frac{37}{4}, -7)$

A) $y = x^2 + 18x + 74$

B) $x = \frac{1}{2}y^2 + 7y + \frac{31}{2}$

C) $x = -y^2 - 14y - 58$

D) $x = y^2 + 14y + 40$

64) Vertex: $(2, -2)$, Focus: $(\frac{15}{8}, -2)$

A) $x = -2y^2 - 8y - 6$

B) $y = -2x^2 + 8x - 10$

C) $x = -2y^2 - 8y - 10$

D) $x = 2y^2 - 12y + 14$

65) Vertex: $(-3, 2)$, Focus: $\left(-\frac{15}{4}, 2\right)$

A) $x = -\frac{1}{3}y^2 + \frac{4}{3}y - \frac{13}{3}$

B) $x = \frac{1}{3}y^2 - 2y + 5$

C) $y = -\frac{1}{3}x^2 - 2x - 1$

D) $x = \frac{5}{3}y^2 + \frac{4}{3}y + \frac{13}{7}$

66) Vertex: $(-1, 0)$, Focus: $\left(-\frac{7}{8}, 0\right)$

A) $y = 2x^2 + 4x + 2$

B) $x = -2y^2 - 1$

C) $x = 2y^2 + 2$

D) $x = 2y^2 - 1$

Use the information provided to write the vertex form equation of each parabola.

67) Vertex: $(9, -4)$, Focus: $\left(\frac{35}{4}, -4\right)$

A) $x = -(y + 4)^2 + 9$

B) $x = -(y - 9)^2 + 4$

C) $x = -(2y + 7)^2 + 9$

D) $x = (y + 4)^2 - 9$

68) Vertex: $(6, -1)$, Focus: $\left(\frac{49}{8}, -1\right)$

A) $y = \frac{1}{2}(x - 6)^2 + 1$

B) $x = -2(y + 2)^2 + 4$

C) $y = (x - 6)^2 - 1$

D) $x = 2(y + 1)^2 + 6$

69) Vertex: $(-4, 2)$, Focus: $\left(-\frac{15}{4}, 2\right)$

A) $y = -(x + 2)^2 - 4$

B) $x = (y - 2)^2 + 1$

C) $x = (y - 2)^2 - 4$

D) $x = -(y - 2)^2 - 4$

70) Vertex: $(-4, 3)$, Focus: $\left(-\frac{63}{16}, 3\right)$

A) $x = 4(y + 3)^2 - 4$

B) $x = 4(y + 5)^2 - 3$

C) $x = 4(y - 3)^2 - 4$

D) $x = 4(y - 3)^2 + 4$

State if the point given is a solution to the system of equations.

71) $-2x^2 + 18x - 3y - 12 = 0$

$-2x + y - 2 = 0$

Point: $(-8, 3)$

A) Yes B) No

72) $x^2 + y^2 + 5x + 9y + 18 = 0$

$x - 2y + 1 = 0$

Point: $(0, -5)$

A) Yes B) No

73) $x^2 + y^2 - 32x - 2y + 77 = 0$

$-2x + y + 1 = 0$

Point: $(4, 7)$

A) No B) Yes

74) $x^2 + y^2 - 7x - y - 12 = 0$

$-x + y - 4 = 0$

Point: $(4, 0)$

A) No B) Yes

Find the discriminant of each quadratic equation then state the number and type of solutions.

75) $7a^2 - 10a - 10 = -2$

A) -47 ; two imaginary solutions

B) 324 ; one real solution

C) 324 ; two imaginary solutions

D) 324 ; two real solutions

76) $2n^2 - 3n = 0$

A) 9 ; two imaginary solutions

B) 24 ; two real solutions

C) 9 ; one real solution

D) 9 ; two real solutions

77) $-4m^2 + 7m - 5 = 0$

- A) -31; two imaginary solutions
 B) 129; two real solutions
 C) -31; one real solution
 D) 29; two imaginary solutions

79) $v^2 = -6v - 5$

- A) 16; one real solution
 B) 16; two real solutions
 C) 16; two imaginary solutions
 D) 56; two real solutions

81) $-8x^2 + 3x = 5x + 3$

- A) -92; two real solutions
 B) -55; two imaginary solutions
 C) -92; two imaginary solutions
 D) 100; two real solutions

Simplify.

82) $\frac{-8 + 3i}{-5 + 2i}$

- A) $\frac{46 + i}{29}$ B) $\frac{8 - 3i}{3}$
 C) $\frac{51 + 3i}{29}$ D) $\frac{8 - 3i}{5}$

84) $\frac{-9 - 5i}{i}$

- A) $12i - 5$ B) $9i - 5$
 C) $-9 - 5i$ D) $16i$

86) $\frac{9 - 3i}{-9 + 6i}$

- A) $\frac{-55 - 30i}{157}$ B) $\frac{-9 + 3i}{4}$
 C) $\frac{-3 + i}{2}$ D) $\frac{-11 - 3i}{13}$

Solve each equation by factoring.

88) $r^2 - 7r = -12$

- A) $\{3, 4\}$ B) $\{-8, 6\}$
 C) $\{3, -4\}$ D) $\{-4, -2\}$

90) $2x^2 = -70 + 24x$

- A) $\{-4, -2\}$ B) $\{-7, -5\}$
 C) $\{-2, -3\}$ D) $\{7, 5\}$

78) $2x^2 - 7x + 8 = 0$

- A) -15; two real solutions
 B) 113; two imaginary solutions
 C) -15; two imaginary solutions
 D) 120; two real solutions

80) $3k^2 - 6 = 3k - 9$

- A) -27; one real solution
 B) -167; two imaginary solutions
 C) 73; two real solutions
 D) -27; two imaginary solutions

83) $\frac{6 + 4i}{-4 - 6i}$

- A) $\frac{-8 - 4i}{9}$ B) $\frac{-66 + 8i}{85}$
 C) $\frac{-12 + 5i}{13}$ D) $\frac{-13 + 6i}{15}$

85) $\frac{-1 - 5i}{10 + i}$

- A) $\frac{-8 - 27i}{61}$ B) $\frac{-1 - 5i}{9}$
 C) $\frac{-15 - 49i}{101}$ D) $\frac{-25 - 49i}{101}$

87) $-\frac{5}{5i}$

- A) $\frac{6i}{5}$ B) $\frac{4i}{5}$
 C) i D) $\frac{2i}{5}$

89) $m^2 = -28 + 11m$

- A) $\{7, 4\}$ B) $\{7\}$
 C) $\{-7, -4\}$ D) $\{-7, 5\}$

91) $b^2 + 6 = -5b$

- A) $\{2, 3\}$ B) $\{2, -8\}$
 C) $\{-1, 6\}$ D) $\{-2, -3\}$

92) $2n^2 = 18$

- A) $\{-4, -8\}$ B) $\{-1, 4\}$
 C) $\{3, -3\}$ D) $\{7, -3\}$

Simplify. Your answer should contain only positive exponents.

93) $y^2 \cdot 4y^4$

- A) $\frac{2}{x^3}$ B) $\frac{8x^2}{y^4}$
 C) $4y^6$ D) $16y^5x^4$

95) $2n \cdot (m^4n^4)^{-2}$

- A) $\frac{m^{12}}{8n^{20}}$ B) $\frac{64m^6}{n^6}$
 C) $\frac{2}{m^8n^7}$ D) $\frac{m^2}{n^2}$

97) $\frac{y \cdot (2yx^3)^{-4}}{x^2y^4}$

- A) $\frac{1}{16y^7x^{14}}$ B) $\frac{x^{12}}{2y^2}$
 C) $\frac{y^4}{32x^6}$ D) $\frac{16x^3}{y^{11}}$

94) $4m^{-2}n^{-1} \cdot 4m^3$

- A) $\frac{16m}{n}$ B) $12m^4n^2$
 C) $48m^9n^4$ D) $\frac{16}{m}$

96) $2x^2y^{-4} \cdot (x^{-4}y^{-2})^{-4}$

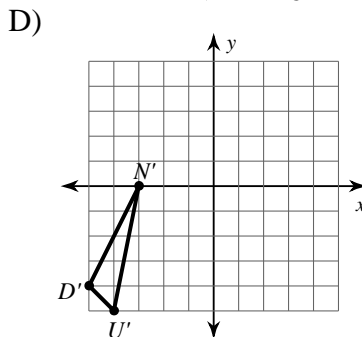
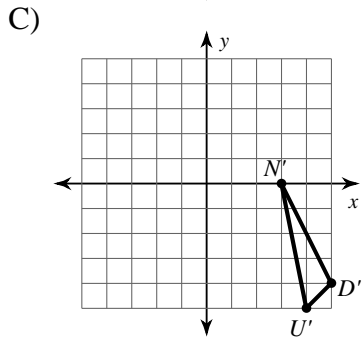
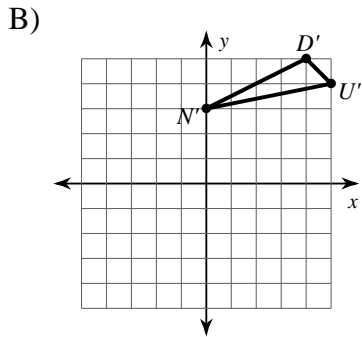
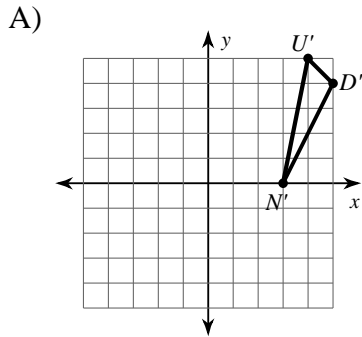
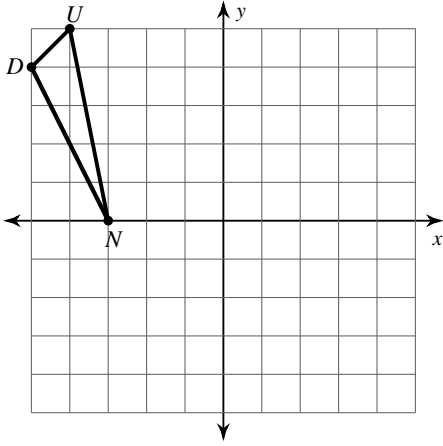
- A) $2y^5x^{16}$ B) $8x^7y^{11}$
 C) $2x^{18}y^4$ D) $32x^{18}y^{11}$

98) $\frac{y}{(xy^4)^{-1} \cdot x^{-3}y^{-2} \cdot 2x^{-1}y^{-3}}$

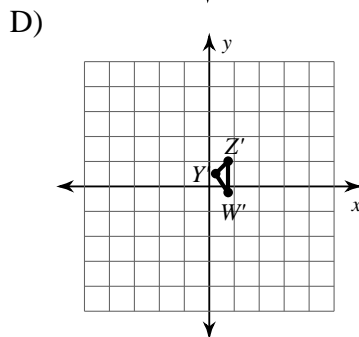
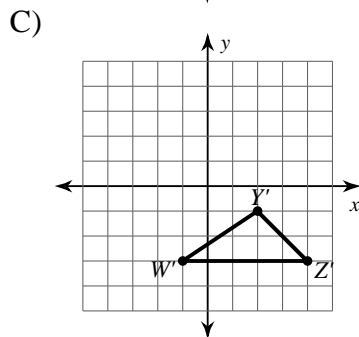
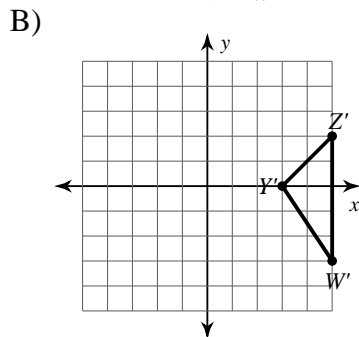
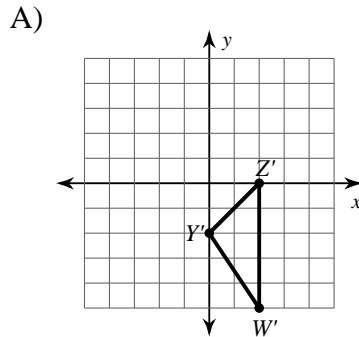
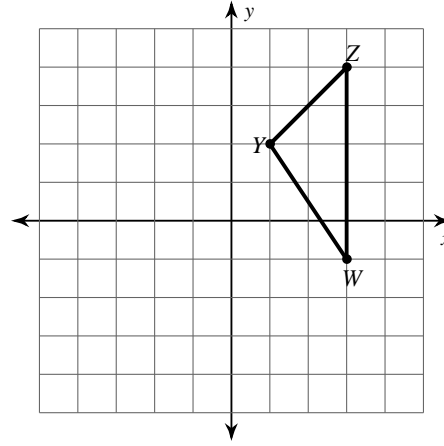
- A) $\frac{x^6}{2y^3}$ B) $\frac{x^5y^{10}}{2}$
 C) $\frac{x^7y^{10}}{128}$ D) $\frac{8y^{18}}{x}$

Graph the image of the figure using the transformation given.

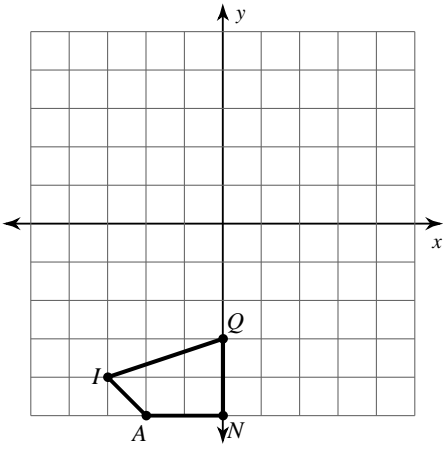
99) rotation 270° counterclockwise about the origin



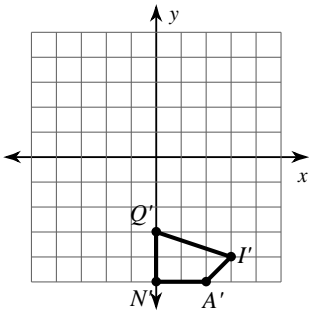
100) rotation 270° counterclockwise about the origin



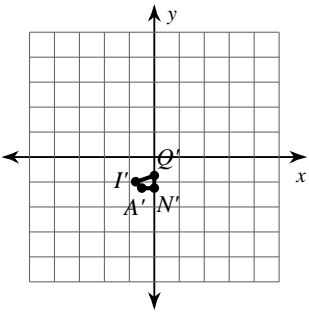
101) dilation of 0.25



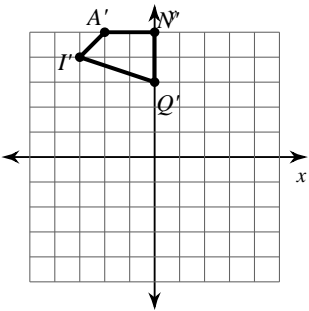
A)



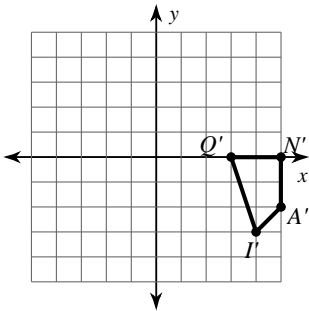
B)



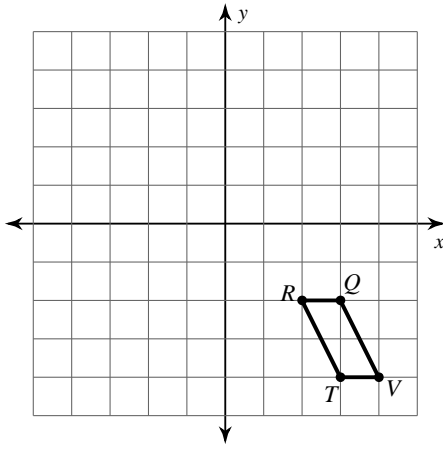
C)



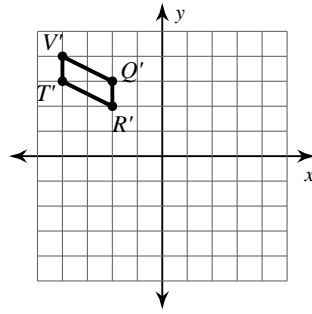
D)



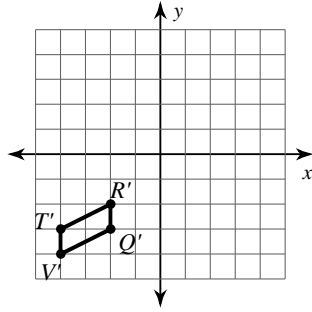
102) reflection across $y = x$



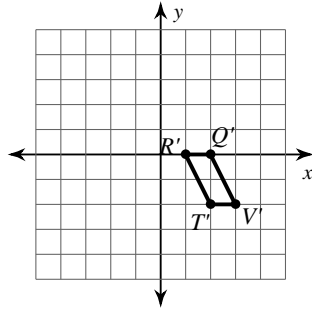
A)



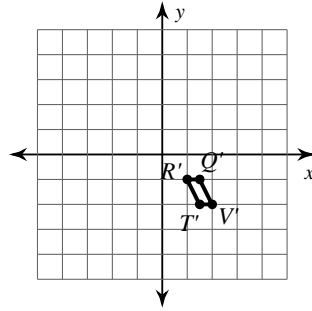
B)



C)

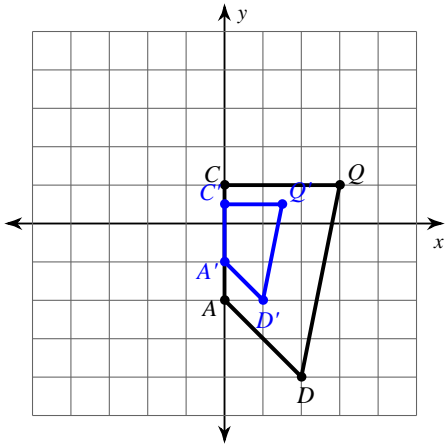


D)



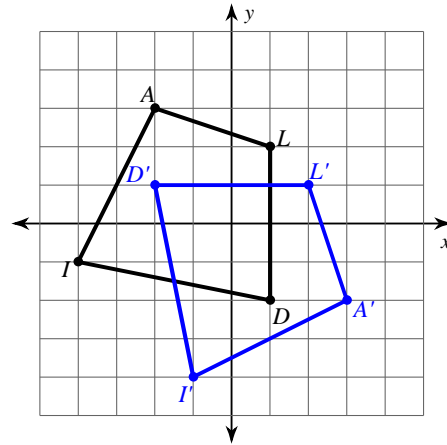
Write a rule to describe each transformation.

103)



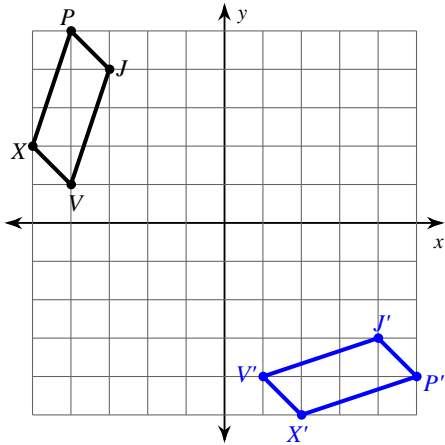
- A) dilation of 0.5
- B) reflection across $y = -x$
- C) translation: 1 unit right and 3 units up
- D) translation: 4 units left and 2 units up

104)



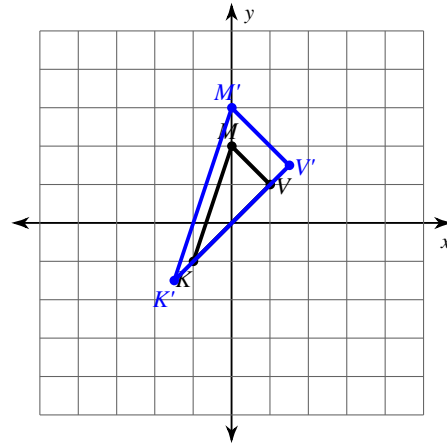
- A) reflection across $y = x$
- B) translation: 1 unit left and 2 units up
- C) reflection across the y-axis
- D) reflection across the x-axis

105)



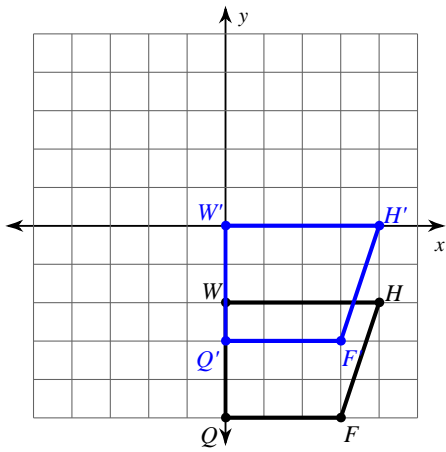
- A) dilation of 0.5
- B) dilation of 0.25
- C) reflection across $y = x$
- D) reflection across $y = -x$

106)



- A) translation: 1 unit right and 2 units up
- B) dilation of 1.5
- C) dilation of 2
- D) translation: 3 units right and 1 unit down

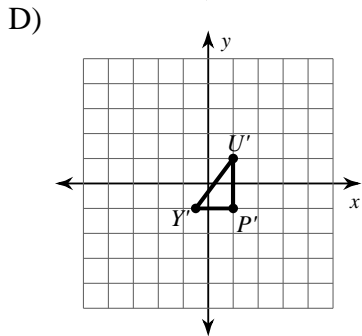
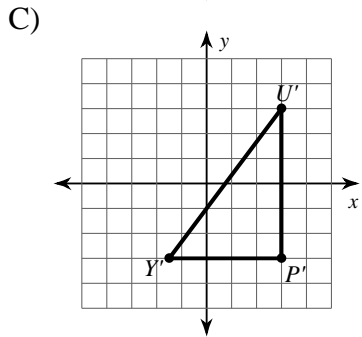
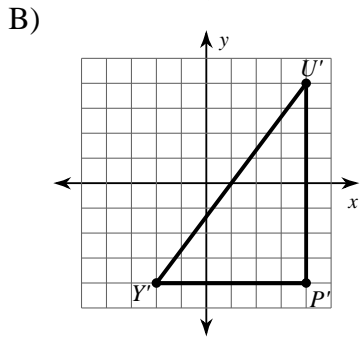
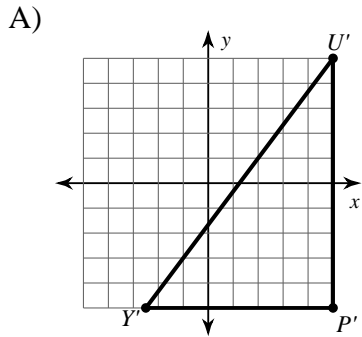
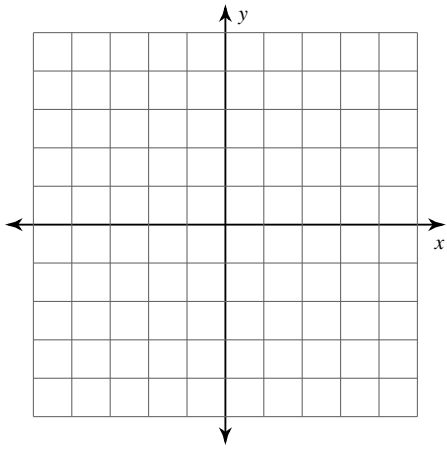
107)



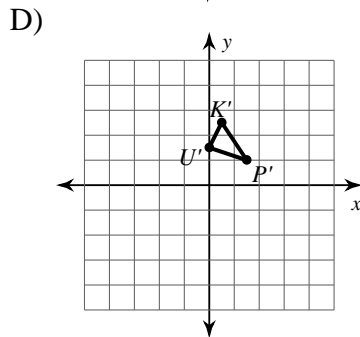
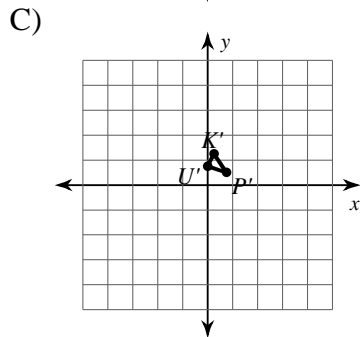
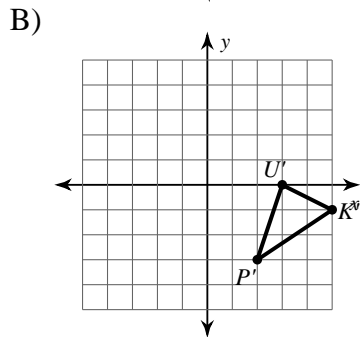
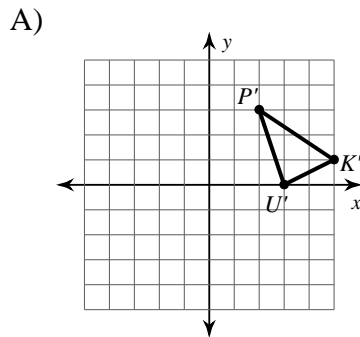
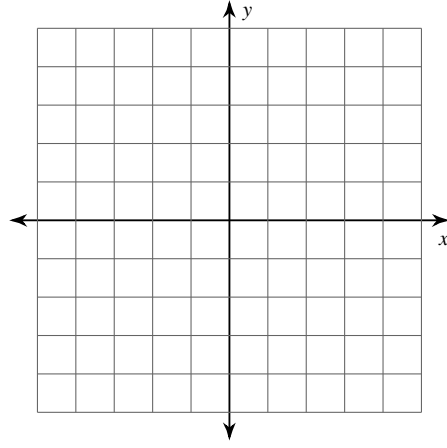
- A) reflection across $y = -x$
- B) dilation of 0.5
- C) translation: 5 units up
- D) translation: 2 units up

Graph the image of the figure using the transformation given.

108) dilation of 1.5
 $Y(-1, -2), U(2, 2), P(2, -2)$

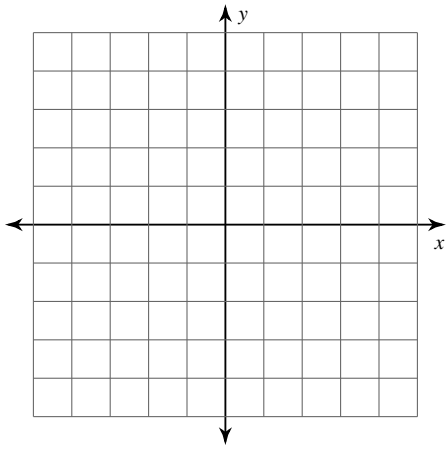


109) dilation of $\frac{1}{4}$
 $U(0, 3), K(1, 5), P(3, 2)$

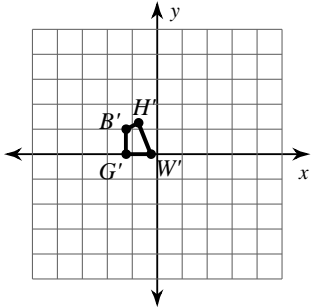


110) dilation of 0.5

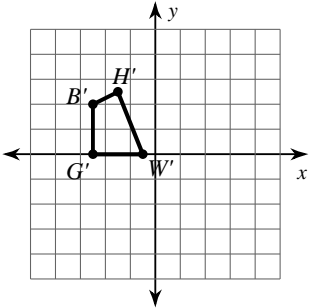
$G(-5, 0)$, $B(-5, 4)$, $H(-3, 5)$, $W(-1, 0)$



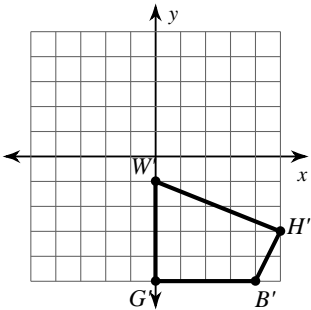
A)



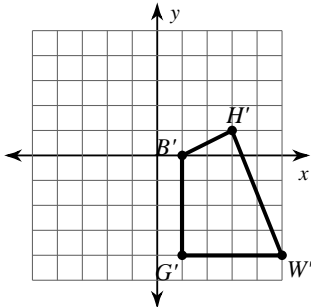
B)



C)



D)



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

111) dilation of $\frac{1}{2}$

$D(-5, 1), T(-4, 3), Z(-1, 2)$

- A) $T'(-4, -3), Z'(-1, -2), D'(-5, -1)$
- B) $D'(1, -1), T'(2, 1), Z'(5, 0)$
- C) $D'(-2.5, 0.5), T'(-2, 1.5), Z'(-0.5, 1)$
- D) $D'(-1.25, 0.25), T'(-1, 0.75), Z'(-0.25, 0.5)$

112) dilation of 2

$R(-2, -1), V(-2, 2), B(2, 2), W(2, -1)$

- A) $R'(-4, -2), V'(-4, 4), B'(4, 4), W'(4, -2)$
- B) $R'(-3, -1.5), V'(-3, 3), B'(3, 3), W'(3, -1.5)$
- C) $R'(-5, -2.5), V'(-5, 5), B'(5, 5), W'(5, -2.5)$
- D) $R'(-1, -0.5), V'(-1, 1), B'(1, 1), W'(1, -0.5)$

113) dilation of 2.5

$V(-1, 0), Y(1, 2), B(0, -1)$

- A) $V'(-1.5, 0), Y'(1.5, 3), B'(0, -1.5)$
- B) $V'(-2.5, 0), Y'(2.5, 5), B'(0, -2.5)$
- C) $V'(-0.25, 0), Y'(0.25, 0.5), B'(0, -0.25)$
- D) $V'(-2, 0), Y'(2, 4), B'(0, -2)$

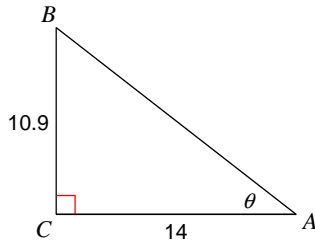
114) dilation of 0.5

$P(2, 0), S(5, 3), E(4, 0)$

- A) $S'(-3, -5), E'(0, -4), P'(0, -2)$
- B) $P'(1, 0), S'(2.5, 1.5), E'(2, 0)$
- C) $P'(0.5, 0), S'(1.25, 0.75), E'(1, 0)$
- D) $P'(-3, -1), S'(0, 2), E'(-1, -1)$

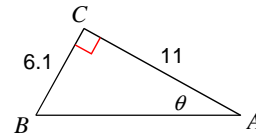
Find the measure of each angle indicated. Round to the nearest tenth.

115)



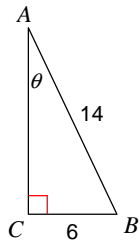
- A) 36.6° B) 38.5°
- C) 37.9° D) 35.8°

116)



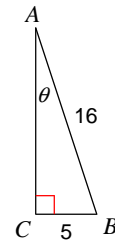
- A) 23.7° B) 36°
- C) 29° D) 21.1°

117)



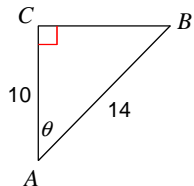
- A) 25.4° B) 29°
- C) 31.7° D) 21.7°

118)



- A) 21.4° B) 16.1°
- C) 22° D) 18.2°

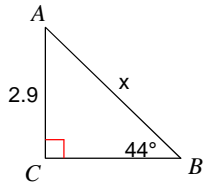
119)



- A) 55.5° B) 39.2°
- C) 44.4° D) 50.7°

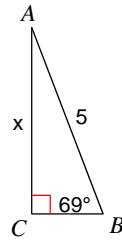
Find the measure of each side indicated. Round to the nearest tenth.

120)



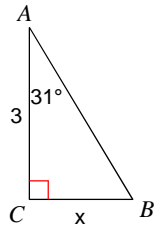
- A) 4.8 B) 4.2
C) 5.3 D) 3.5

121)



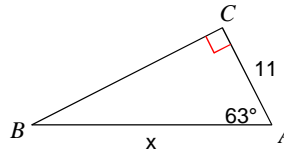
- A) 3.6 B) 4
C) 3.3 D) 4.7

122)



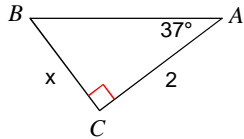
- A) 1.1 B) 1.8
C) 1.5 D) 2.5

123)



- A) 24.2 B) 30.8
C) 27.3 D) 29.6

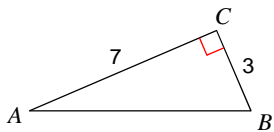
124)



- A) 1.1 B) 0.8
C) 1.5 D) 0.4

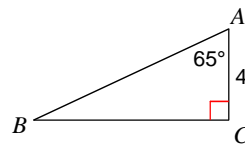
Solve each triangle. Round answers to the nearest tenth.

125)



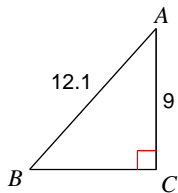
- A) $m\angle B = 68.9^\circ$, $m\angle A = 21.1^\circ$, $c = 7.6$
B) $m\angle B = 71.5^\circ$, $m\angle A = 18.5^\circ$, $c = 7.6$
C) $m\angle B = 66.8^\circ$, $m\angle A = 23.2^\circ$, $c = 7.6$
D) $m\angle B = 64.6^\circ$, $m\angle A = 25.4^\circ$, $c = 7.6$

126)



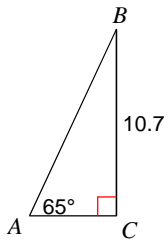
- A) $m\angle B = 25^\circ$, $a = 8.6$, $c = 11$
B) $m\angle B = 25^\circ$, $a = 8.6$, $c = 10.2$
C) $m\angle B = 25^\circ$, $a = 7.9$, $c = 9.5$
D) $m\angle B = 25^\circ$, $a = 8.6$, $c = 9.5$

127)



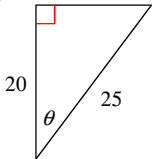
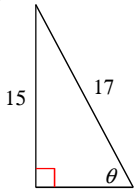
- A) $m\angle A = 44.9^\circ$, $m\angle B = 45.1^\circ$, $a = 8.1$
B) $m\angle A = 41.9^\circ$, $m\angle B = 48.1^\circ$, $a = 8.1$
C) $m\angle A = 38.9^\circ$, $m\angle B = 51.1^\circ$, $a = 8.1$
D) $m\angle A = 42.4^\circ$, $m\angle B = 47.6^\circ$, $a = 8.1$

128)

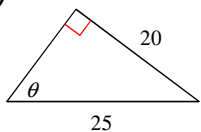


- A) $m\angle B = 25^\circ$, $b = 5$, $c = 11.1$
 B) $m\angle B = 25^\circ$, $b = 5$, $c = 15$
 C) $m\angle B = 25^\circ$, $b = 5$, $c = 12.8$
 D) $m\angle B = 25^\circ$, $b = 5$, $c = 11.8$

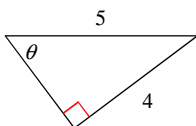
Find the value of the trig function indicated.

130) $\cos \theta$ 132) $\sin \theta$ 

- A) $\frac{15}{8}$ B) $\frac{3}{4}$
 C) $\frac{15}{17}$ D) $\sqrt{5}$

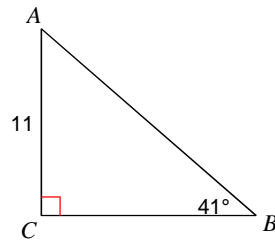
134) $\tan \theta$ 

- A) $\frac{5}{4}$ B) $\frac{4}{5}$
 C) $\frac{12}{13}$ D) $\frac{4}{3}$

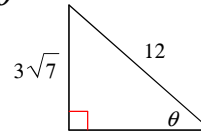
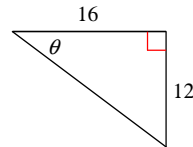
136) $\sin \theta$ 

- A) $\frac{5}{4}$ B) $\frac{4}{5}$
 C) $\frac{4}{3}$ D) 2

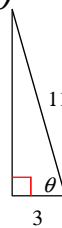
129)



- A) $m\angle A = 49^\circ$, $a = 12.7$, $c = 16.8$
 B) $m\angle A = 49^\circ$, $a = 12.1$, $c = 16.8$
 C) $m\angle A = 49^\circ$, $a = 11.6$, $c = 16.8$
 D) $m\angle A = 49^\circ$, $a = 12.7$, $c = 15.3$

131) $\tan \theta$ 133) $\sin \theta$ 

- A) $\frac{5}{3}$ B) $\frac{4}{5}$
 C) $\frac{4}{3}$ D) $\frac{3}{5}$

135) $\sin \theta$ 

- A) $\frac{1}{2}$ B) $\frac{3\sqrt{7}}{28}$
 C) $\frac{4}{5}$ D) $\frac{4\sqrt{7}}{11}$

137) Find $\cos \theta$ if $\sin \theta = \frac{\sqrt{5}}{5}$

- A) $\sqrt{5}$ B) $\frac{\sqrt{5}}{2}$
 C) $\frac{\sqrt{7}}{3}$ D) $\frac{2\sqrt{5}}{5}$

138) Find $\cos \theta$ if $\sin \theta = \frac{3}{5}$

- A) $\frac{5}{4}$ B) $\frac{4}{5}$
C) $\frac{5}{3}$ D) $\frac{19}{3}$

140) Find $\tan \theta$ if $\sin \theta = \frac{13\sqrt{17}}{85}$

- A) $\frac{16\sqrt{17}}{85}$ B) $\frac{16}{13}$
C) $\frac{13\sqrt{17}}{85}$ D) $\frac{13}{16}$

139) Find $\cos \theta$ if $\sin \theta = \frac{24}{25}$

- A) $\frac{7}{25}$ B) $\frac{3}{2}$
C) $\frac{25}{24}$ D) $\frac{7}{24}$

141) Find $\cos \theta$ if $\tan \theta = \sqrt{15}$

- A) $\frac{\sqrt{15}}{15}$ B) $\frac{1}{4}$
C) 4 D) $\frac{4\sqrt{15}}{15}$

Answers to Assignment (ID: 1)

- | | | | |
|---------------|--------------------|---------------------------|----------------|
| 1) C | 2) D | 3) A | 4) A |
| 5) D | 6) C | 7) D | 8) C |
| 9) D | 10) A | 11) D | 12) D |
| 13) B | 14) A | 15) B | 16) A |
| 17) D | 18) B | 19) A | 20) D |
| 21) D | 22) B | 23) A | 24) D |
| 25) B | 26) B | 27) A | 28) B |
| 29) D | 30) C | 31) C | 32) A |
| 33) A | 34) D | 35) $7i$ | 36) $10 + 10i$ |
| 37) $-8 - 7i$ | 38) $48 + 48i$ | 39) $-96 + 120i$ | 40) A |
| 41) B | 42) C | 43) A | 44) D |
| 45) C | 46) B | 47) B | 48) A |
| 49) D | 50) B | 51) C | 52) B |
| 53) D | 54) B | 55) B | 56) D |
| 57) C | 58) B | 59) A | 60) C |
| 61) D | 62) D | 63) C | 64) A |
| 65) A | 66) D | 67) A | 68) D |
| 69) C | 70) C | 71) B | 72) B |
| 73) B | 74) A | 75) D | 76) D |
| 77) A | 78) C | 79) B | 80) D |
| 81) C | 82) A | 83) C | 84) B |
| 85) C | 86) D | 87) C | 88) A |
| 89) A | 90) D | 91) D | 92) C |
| 93) C | 94) A | 95) C | 96) C |
| 97) A | 98) B | 99) B | 100) C |
| 101) B | 102) A | 103) A | 104) A |
| 105) C | 106) B | 107) D | 108) C |
| 109) C | 110) B | 111) C | 112) A |
| 113) B | 114) B | 115) C | 116) C |
| 117) A | 118) D | 119) C | 120) B |
| 121) D | 122) B | 123) A | 124) C |
| 125) C | 126) D | 127) B | 128) D |
| 129) A | 130) $\frac{4}{5}$ | 131) $\frac{\sqrt{7}}{3}$ | 132) C |
| 133) D | 134) D | 135) D | 136) B |
| 137) D | 138) B | 139) A | 140) D |
| 141) B | | | |