

Algebra 1 Placement Test

Answer Key

I

- $$\left(-\frac{1}{2}\right)^2 + (ab)^0 - 3^2 = \frac{1}{4} + 1 - 9$$

$$= \frac{1}{4} - 8$$

$$= \frac{1}{4} - \frac{32}{4}$$

$$= -\frac{31}{4} = -7\frac{3}{4}$$
- $$\sqrt{16X^2} = 4X$$
- $$(2^2)^3(2^2) = 4^3 \cdot 4 = 64 \cdot 4 = 256$$
- $$|6 - 8| = |-2| = 2$$
- $$\sqrt{X^2 + 4X + 4} = X + 2$$
- $$81^{\frac{1}{2}} = 9$$
- $$\frac{3X^2}{X^{-4}} + \frac{5X}{X^{-1}} = 3X^2X^4 + 5XX = 3X^6 + 5X^2$$

II

- $$3X^2 - 27 = (3)(X^2 - 9) = (3)(X - 3)(X + 3)$$
- $$5X^2 - 9X - 2 = (5X + 1)(X - 2)$$
- $$X^3 + 5X^2 + 6X = (X)(X^2 + 5X + 6)$$

$$= (X)(X + 2)(X + 3)$$
- $$14Y^2 - 7Y - 42 = (7)(2Y^2 - Y - 6)$$

$$= (7)(2Y + 3)(Y - 2)$$

III.

- $$10^6 = 10^{(3)(x)}$$

$$10^{(3)(2)} = 10^{(3)(x)}$$

$$X = 2$$

IV.

- $$3X^2 - 6X = 0$$

$$(3X)(X - 2) = 0$$

$$3X = 0 \quad X - 2 = 0$$

$$X = 0 \quad X = 2$$
- $$\frac{1}{6}X - \frac{1}{2} = \frac{2}{3}$$

$$(30)\left(\frac{1}{6}\right)X - (30)\left(\frac{1}{2}\right) = (30)\left(\frac{2}{3}\right)$$

$$\frac{30}{6}X - \frac{30}{2} = \frac{60}{3}$$

$$5X - 15 = 20$$

$$5X = 35$$

$$X = 7$$
- $$X + .25X = .4$$

$$(100)(X + .25X) = .4$$

$$100X + 25X = 40$$

$$125X = 40$$

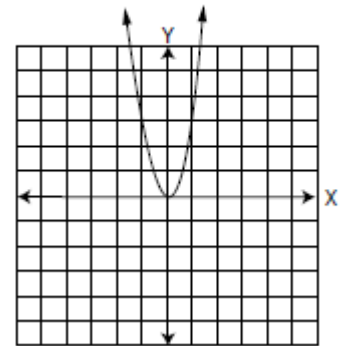
$$X = \frac{40}{125} = \frac{8}{25} \text{ or } .32$$

V.

- parabola

X	Y
0	0
1	2
-1	2
2	8
-2	8

see graph



- ellipse

When $X = 0$:

$$4X^2 + Y^2 = 16$$

$$4(0)^2 + Y^2 = 16$$

$$Y^2 = 16$$

$$Y = \pm 4$$

When $Y = 0$:

$$4X^2 + Y^2 = 16$$

$$4X^2 + (0)^2 = 16$$

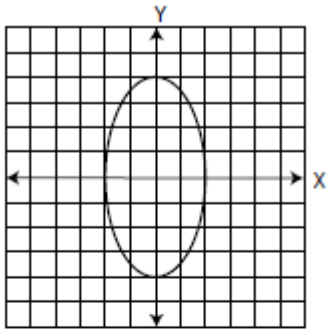
$$4X^2 = 16$$

$$X^2 = 4$$

$$X = \pm 2$$

Points: $(0, 4)$; $(0, -4)$; $(+2, 0)$; $(-2, 0)$

see graph



3. y -intercept = 1; slope = 3
see graph

