

Name:

Some answers

Period:

Test Next Time!**Algebra 2****Review for Test #1 – Qtr 4****A day (April 11) B day (Dec 12)**

1. Simplify

$$\begin{aligned} \text{a) } &= \sqrt{36m^4} \\ &= 6m^2 \end{aligned}$$

$$\begin{aligned} \text{b) } &= \sqrt[3]{40a^3b^5} \\ &= \end{aligned}$$

$$\begin{aligned} \text{c) } &= \sqrt[3]{-27x^7y^{12}} \\ &= -3x^2y^4\sqrt[3]{x} \end{aligned}$$

$$\text{d) } \sqrt[4]{80c^3d^6}$$

$$\begin{aligned} \text{e) } &(\sqrt{18})(\sqrt{14}) \\ &= 6\sqrt{7} \end{aligned}$$

$$\text{f) } (5\sqrt{12})(4\sqrt{15})$$

$$\text{g) } (\sqrt[4]{a^2b^3c})(\sqrt[4]{a^5bc^2})$$

$$= ab\sqrt[4]{a^3c^3}$$

$$\text{h) } 9\sqrt{12} + 16\sqrt{27}$$

$$= 66\sqrt{3}$$

$$\text{i) } 12\sqrt{45} - 8\sqrt{80}$$

$$\text{j) } \sqrt{6}(2 - 3\sqrt{6})$$

$$= 2\sqrt{6} - 18$$

$$\text{k) } (\sqrt{5} + 6)(\sqrt{5} - 6)$$

$$\text{l) } (5 + \sqrt{6})(4 - 2\sqrt{6})$$

$$= 8 - 6\sqrt{6}$$

2. Divide and simplify

$$\text{a) } \frac{\sqrt[3]{40}}{\sqrt[3]{5}}$$

$$= 2$$

$$\text{b) } \frac{\sqrt{56ab^3}}{\sqrt{7a}}$$

$$= 2b\sqrt{2b}$$

3. List the methods for determining the roots (in other words . . . zeros) of a quadratic equation.

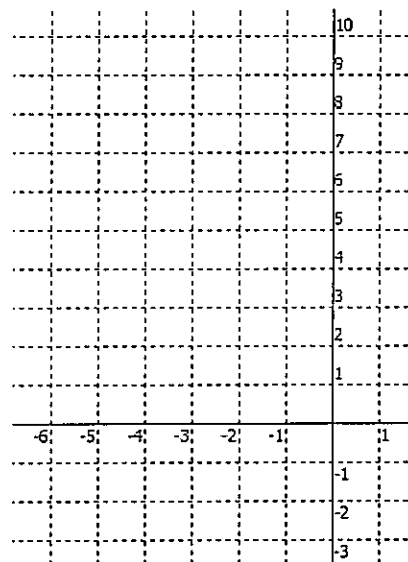
- a.
- b.
- c.
- d.

4. Graph $f(x) = (x+3)^2 - 1$ and determine:

- a) vertex: $(-3, 1)$
- b) zero(s):
- c) y-intercept: $(0, 8)$
- d) Write the *equation* in expanded form ($y = ax^2 + bx + c$)
(remember: equations always have equal signs)

$$f(x) = x^2 + 6x + 8$$

- e) Write the *equation* in factored form
 $f(x) = y = (x + 4)(x + 2)$



5. Write the equation of a parabola with roots at $x = -1$ and 3

- a) Write the *equation* in factored form

$$y = (x + 1)(x - 3)$$

- b) Write the *equation* in expanded form

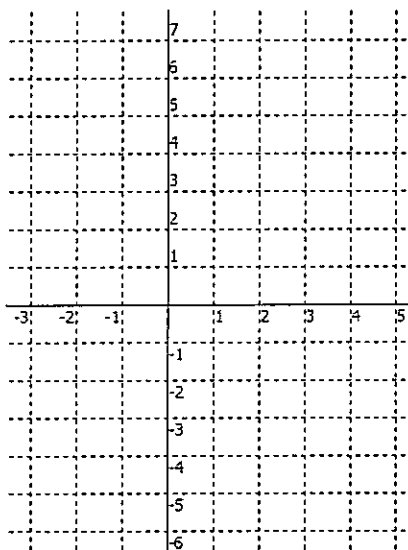
$$y = ax^2 + bx + c$$

$$y = x^2 - 2x - 3$$

- c) y-intercept:

- d) Write the *equation* in vertex form $y = (x - h)^2 + k$

- e) vertex: $(1, -4)$



- f) Graph the parabola

7. Graph $y = x^2 - 8x + 9$ and determine:

a) y -intercept:

b) Write the *equation* in vertex form

$$y = (x - h)^2 + k$$

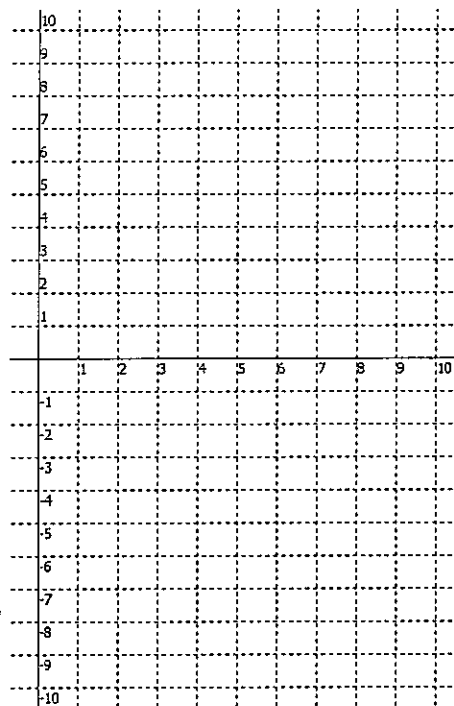
$$y = x^2 - 8x \quad \underline{\quad} + 9 \quad \underline{\quad}$$

$$y = (\quad)^2 \underline{\quad}$$

c) vertex:

d) zero(s):

(hint: this is not factorable)



8. Choose the correct method for solving the equation $\sqrt{x-4} - 3 = 7$
 Explain *why* the other methods are incorrect.

Method (A)

$$\sqrt{x-4} - 3 = 7$$

$$(\sqrt{x-4} - 3)^2 = (7)^2$$

$$x - 4 - 9 = 49$$

$$x - 13 = 49$$

$$x = 62$$

Method (B)

$$\sqrt{x-4} - 3 = 7$$

$$(\sqrt{x-4} - 3)^2 = (7)^2$$

$$x - 4 + 9 = 49$$

$$x + 5 = 49$$

$$x = 44$$

Method (C)

$$\sqrt{x-4} - 3 = 7$$

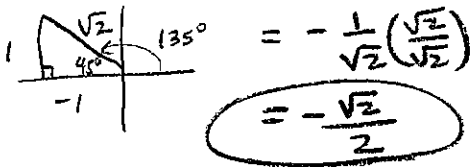
$$\sqrt{x-4} = 10$$

$$(\sqrt{x-4})^2 = (10)^2$$

$$x - 4 = 100$$

$$x = 104$$

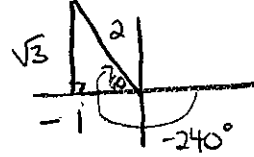
$$9) \cos 135^\circ = -\frac{1}{\sqrt{2}}$$



$$11) \sec 300^\circ$$

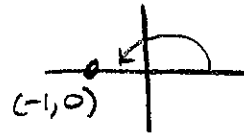
$$10) \tan -90^\circ$$

$$12) \cot -240^\circ = -\frac{1}{\sqrt{3}} = \frac{-\sqrt{3}}{3}$$



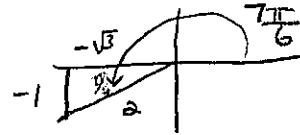
$$13) \tan 30^\circ$$

$$14) \cot 180^\circ = \frac{-1}{0} = \text{undef.}$$



$$15) \sin 0$$

$$16) \sin \frac{7\pi}{6} = -\frac{1}{2}$$

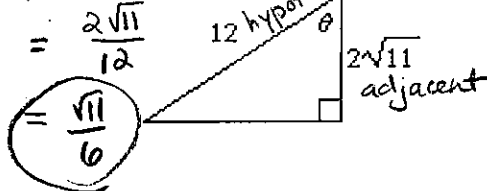


$$17) \sin \frac{\pi}{6}$$

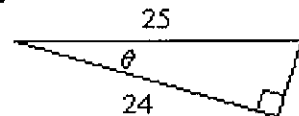
$$18) \cos \frac{7\pi}{6}$$

Find the value of the trig function indicated.

$$19) \cos \theta$$



$$20) \sec \theta$$



$$21) \sec \theta$$



$$22) \tan \theta$$

