

Week 7 Exercises

1. Use GSP, WinGeom or the graphing calculator to convert the following Standard forms to Factored forms

(a) $y = -4x^2 - 32x - 60$

(b) $y = x^2 + \frac{1}{6}x - \frac{1}{3}$

2. Use GSP, WinGeom or the graphing calculator to convert the following Standard forms to Vertex forms

(a) $y = -4x^2 - 32x - 60$

(b) $y = x^2 + \frac{1}{6}x - \frac{1}{3}$

3. Use GSP, WinGeom or the graphing calculator to convert the following Facotred forms to Vertex forms.

(a) $y = -2(x + 5)(x - 1)$

(b) $y = -(x + 5)(x + 2)$

4. Use GSP, WinGeom or the graphing calculator to convert the following Vertex forms to Facotred forms. Some of the numbers may get a little messy so if they are not nice you can use approximations, that is, use 1.414213562 instead of $\sqrt{2}$.

(a) $y = 2(x + 1)^2 - 4$

(b) $y = (x - 2)^2 - 7$

5. Use algebra to convert any one of the following Standard forms to Factored forms

(a) $y = -4x^2 - 32x - 60$

(b) $y = x^2 + \frac{1}{6}x - \frac{1}{3}$

6. Use algebra to convert any one of the following Standard forms to Vertex forms

(a) $y = -4x^2 - 32x - 60$

(b) $y = x^2 + \frac{1}{6}x - \frac{1}{3}$

7. Use algebra to convert any one of the following Facotred forms to Vertex forms.

(a) $y = -2(x + 5)(x - 1)$

(b) $y = -(x + 5)(x + 2)$

8. Use algebra to convert any one of the following Vertex forms to Facotred forms. Some of the numbers may get a little messy so if they are not nice you can use approximations, that is, use 1.414213562 instead of $\sqrt{2}$.

(a) $y = 2(x + 1)^2 - 4$

(b) $y = (x - 2)^2 - 7$