

## **Station 1: GCF and Factor by Grouping**

1. Find the GCF:  $30s^4t^4$  and  $36s^3t^5$
2. Find the GCF:  $18t^5$ ,  $120s^4$ , and  $30t^2$
3. Find the GCF:  $26m^5$ ,  $5n^6$ , and  $8n$
4. Factor out the GCF:  $5g^5 - 10g^2 - 15g$
5. Factor:  $m^5 - 25m^3$
6. Factor:  $2t^3 + 6t^2 + t + 3$
7. Factor:  $-5b^2 + 6b + 10b - 12$

**Station 2: Factoring Special Products and**  
**Trinomials**

1.  $9y^2 - 121$

2.  $d^2 - 25$

3.  $x^2 - 2x + 1$

4.  $81x^2 + 144x + 64$

5.  $x^2 - 6x + 8$

6.  $2x^2 + 6x - 56$

7.  $3a^2 + 9a - 54$

Station <sup>3</sup> 3: Solve the Equation by Factoring

1.  $(x + 4)(x - 7) = 0$

2.  $(2x + 1)(3x - 2) = 0$

3.  $x^2 - 8x = 9$

4.  $3x^2 - 8x = 3$

5.  $-x^2 = 4x + 4$

6.  $x^3 + 4x^2 = 0$  (hint: factor out the GCF on the left side)

7 . A group of friends tries to keep a beanbag from touching the ground. On one kick, the beanbag's height can be modeled by  $h(t) = -16t^2 + 14t + 2$ , where  $h$  is the height in feet above the ground and  $t$  is the time in seconds. Find the time it takes the beanbag to reach the ground.

## Station 1

- ①  $6s^3t^4$
- ② 6
- ③ 1
- ④  $5g(g^4 - 2g^2 - 3)$
- ⑤  $m^3(m^2 - 25)$   
 $m^3(m+5)(m-5)$
- ⑥  $(2t^2 + 1)(t + 3)$
- ⑦  $(-b + 2)(5b - 6)$

## Station 2

- ①  $(3y + 11)(3y - 11)$
- ②  $(d - 5)(d + 5)$
- ③  $(x - 1)^2$
- ④  $(9x + 8)^2$
- ⑤  $(x - 4)(x - 2)$
- ⑥  $2(x + 7)(x - 4)$
- ⑦  $3(a + 6)(a - 3)$

## Station 3

- ①  $x = -4$  or  $x = 7$
- ②  $x = -\frac{1}{2}$  or  $x = \frac{2}{3}$
- ③  $x = 9$  or  $x = -1$
- ④  $x = -\frac{1}{3}$  or  $x = 3$
- ⑤  $x = -2$
- ⑥  $x = 0$  or  $x = -4$
- ⑦  $t = 1 \rightarrow 1 \text{ second}$   
 $0 = -2(8t^2 - 7t - 1)$   
 $0 = -2(8t + 1)(t - 1)$   
 $t = 1$  or  $t = -\frac{1}{8}$