

Algebra 2 Bellwork Friday, October 2, 2015

Use these functions: $k(m) = m^2 + 8m$

$g(w) = 6w - 5$

1. Find $k(x - 6)$

2. Find $g\left(\frac{x+7}{3}\right)$

Factor each quadratic.

3. $8x^2 - 22x + 15$

4. $6c^2 - c - 15$

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ANSWERS

1. Find $k(x - 6)$

2. Find $g\left(\frac{x+7}{3}\right)$

$$\begin{aligned} k(x-6) &= (x-6)^2 + 8(x-6) \\ &= x^2 - 12x + 36 + 8x - 48 \\ &= x^2 - 4x - 12 \end{aligned}$$

$$\begin{aligned} g\left(\frac{x+7}{3}\right) &= 6\left(\frac{x+7}{3}\right) - 5 \\ &= 2(x+7) - 5 \\ &= 2x + 14 - 5 \\ &= 2x + 9 \end{aligned}$$

Factor each quadratic.

3. $8x^2 - 22x + 15 = (2x-3)(4x-5)$

4. $6c^2 - c - 15 = (2c+3)(3c-5)$

Diagram for factoring $8x^2 - 22x + 15$ using the AC method:

Top: 120, Bottom: -22, Left: -10, Right: -12

Diagram for factoring $8x^2 - 22x + 15$ using the box method:

	$2x$	-3
$4x$	$8x^2$	$-12x$
-5	$-10x$	$+15$

Diagram for factoring $6c^2 - c - 15$ using the AC method:

Top: -90, Bottom: -1, Left: -10, Right: 9

Diagram for factoring $6c^2 - c - 15$ using the box method:

	$2c$	$+3$
$3c$	$6c^2$	$+9c$
-5	$-10c$	-15