

GCF
$$0 | 2x^{2} - 16$$

$$4 (3x^{2} - 4)$$

Special Cases,

$$A^{2}-B^{2} = (A+B)(A-B)$$

$$A^{2}+2AB+B^{2} = (A+B)^{2}$$

$$A^{2}-2AB+B^{2} = (A-B)^{2}$$

$$(3) \times (2-9) \times (2-3) \times (2-3) \times (2-3) \times (2-49) \times (2-49) \times (2-42) \times$$

6)
$$25m^2 - 30m + 29$$

 $(5m - 3)$
 $9p^2 - 81$
 $9(p^2 - 9)$
 $9(p+3)(p-3)$

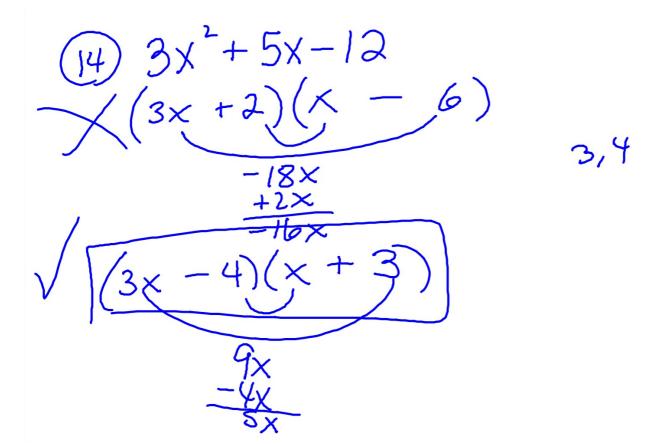
Factoring (not special cases)

(8)
$$\chi^2 - 4x - 12$$
 (11) $n^2 + 5n - 12$ cannot be factored

$$9 x^{2} + 6x - 40 (x + 10)(x - 4)$$

$$\frac{10}{(x-8)(x-3)}$$

$$\begin{array}{c}
(13) \quad 3a^{2} + 7a + 4 \\
\hline
(3a + 4)(a + 1) \\
\hline
3a \\
+4a \\
7a
\end{array}$$



$$(15) - 21x^{2} + 77x + 28$$

$$-7(3x^{2} - 11x - 4)$$

$$-7(3x + 1)(x - 4)$$

$$-12x$$

$$-12x$$

$$+1x$$

$$-1x\sqrt{x}$$



Factoring (continued) 1.3 and 1.4

The solutions of a quadratic equation are also called the <u>roots</u> of the equation.

Solve the equation.

1)
$$x^{2}-8x+12=0$$

 $(x-6)(x-2)=0$
 $x=6$, $x=2$
 $x=6$

Zero product
property

X·O = 0

(a)
$$u^2 = 9u$$

 $-9u$ (3) $-3y + 28 = y^2$
 $-9u$ (3) $-3y + 28 = y^2$
 $0 = y^2 + 3y - 28$
 $0 = (y + 7)(y - 4)$
 $0 = (y + 7)(y - 4)$

6
$$6r^2 - 2r - 4 = 1 + 5r$$

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 $6r^2 - 2r - 4 = 1 + 5r$
 $6r^2 - 7r - 5 = 0$
 $6r^2 - 5r - 5 = 0$
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The zeros of a function are where the function intercepts the x-axis. (where the function's value is zero.

Find the zeroes of the function by rewriting the function in intercept form.

(8)
$$f(x) = 3x^2 - 12$$

 $0 = 3(x-2)(x+2)$
 $2, -2$
(9) $y = 3x^2 - 12x$
 $0 = 3x(x-4)$
 $0 = 3x(x-4)$

$$(10) f(x) = (64x^{2} + 144x + 8)$$

$$0 = (64x^{2} + 144x + 8)$$

$$0 = (8x + 9)(8x + 9)$$

$$0 = (8x + 9)$$

Simplifying Radicals

$$\sqrt{48}$$
 $\frac{8}{16}$ = $\frac{816}{6}$
 $\sqrt{16.3}$ = $\frac{416}{3}$
 $\sqrt{35}$ = $\sqrt{35}$
 $\sqrt{36}$ = $\sqrt{35}$