

$$\begin{aligned}
 x_1x_2 + x_1^2x_2^2 + x_3, \\
 x_1x_3 + x_1^2x_3^2 + x_2, \\
 x_1x_2x_3.
 \end{aligned}
 \tag{1}$$

```

\begin{gather}
x_{\{1\}} x_{\{2\}} + x_{\{1\}}^{\{2\}} x_{\{2\}}^{\{2\}} + x_{\{3\}}, \notag \\
x_{\{1\}} x_{\{3\}} + x_{\{1\}}^{\{2\}} x_{\{3\}}^{\{2\}} + x_{\{2\}}, \label{E:ml9} \\
x_{\{1\}} x_{\{2\}} x_{\{3\}}. \notag
\end{gather}

```

$$\begin{aligned}
& (x_1 x_2 x_3 x_4 x_5 x_6)^2 + \\
& \quad (x_1 x_2 x_3 x_4 x_5 + x_1 x_3 x_4 x_5 x_6 + x_1 x_2 x_4 x_5 x_6 + x_1 x_2 x_3 x_5 x_6)^2 + \\
& \quad (x_1 x_2 x_3 x_4 + x_1 x_2 x_3 x_5 + x_1 x_2 x_4 x_5 + x_1 x_3 x_4 x_5 + x_2 x_3 x_4 x_5)^2 \quad (2)
\end{aligned}$$

```

\begin{multline}\label{E:ml13}
(x_{1} x_{2} x_{3} x_{4} x_{5} x_{6})^{2} +\!\!
(x_{1} x_{2} x_{3} x_{4} x_{5} + x_{1} x_{3} x_{4}
x_{5} x_{6} + x_{1} x_{2} x_{4} x_{5} x_{6}
+ x_{1} x_{2} x_{3} x_{5} x_{6})^{2}+\!\!
(x_{1} x_{2} x_{3} x_{4} + x_{1} x_{2} x_{3} x_{5}
+ x_{1} x_{2} x_{4} x_{5} + x_{1} x_{3} x_{4} x_{5}
+ x_{2} x_{3} x_{4} x_{5})^{2}
\end{multline}

```

$$x = y + z, \tag{3}$$

$$u = v + w. \tag{4}$$

```
\begin{align} \label{E:m11}
  x &= y + z, \\
  u &= v + w. \label{E:m11a}
\end{align}
```

$$\begin{aligned}
 h(x) &= \int \left(\frac{f(x) + g(x)}{1 + f^2(x)} + \frac{1 + f(x)g(x)}{\sqrt{1 - \sin x}} \right) dx \\
 &= \int \frac{1 + f(x)}{1 + g(x)} dx - 2 \tan^{-1}(x - 2)
 \end{aligned} \tag{5}$$

```

\begin{align} \label{E:ml2}
  h(x) &= \int \left( \frac{f(x) + g(x)}{1 + f^2(x)} + \right. \\
  &\quad \left. \frac{1 + f(x)g(x)}{\sqrt{1 - \sin x}} \right) dx \\
  &= \int \frac{1 + f(x)}{1 + g(x)} dx - 2 \tan^{-1}(x - 2) \notag
\end{align}

```

$$\begin{aligned}
x &= x \wedge (y \vee z) && \text{(by distributivity)} && (6) \\
&= (x \wedge y) \vee (x \wedge z) && \text{(by condition (M))} \\
&= y \vee z.
\end{aligned}$$

```

\begin{align}
x &= x \wedge (y \vee z) && \text{(by distributivity)} \\
&= (x \wedge y) \vee (x \wedge z) && \text{(by condition (M))} \\
&= y \vee z. \quad \text{\notag} \\
\end{align}

```

$$\begin{aligned}
 f(x) &= x + yz & g(x) &= x + y + z & (7) \\
 h(x) &= xy + xz + yz & k(x) &= (x + y)(x + z)(y + z)
 \end{aligned}$$

```

\begin{align}\label{E:mm3}
  f(x) &= x + yz & & g(x) &= x + y + z \\
  h(x) &= xy + xz + yz & & k(x) &= (x + y)(x + z)(y + z) \\
  & \notag \\
\end{align}

```

$$f(x) = x + yz$$

$$h(x) = xy + xz + yz$$

$$g(x) = x + y + z \quad (8)$$

$$k(x) = (x + y)(x + z)(y + z)$$

```
\begin{flalign}\label{E:mm3fl}
```

```
f(x) &= x + yz & g(x) &= x + y + z \\
```

```
h(x) &= xy + xz + yz & k(x) &= (x + y)(x + z)(y + z)
```

```
\notag
```

```
\end{flalign}
```

$$x = 17y \tag{9}$$

$$y > a + b + c \tag{10}$$

$$x = 17y \tag{11}$$

$$y > a + b + c \tag{12}$$

```
\begin{eqnarray}
  x & = & 17y \\
  y & > & a + b + c
\end{eqnarray}
```

```
\begin{align}
  x & = 17y \\
  y & > a + b + c
\end{align}
```


$$x_1 + y_1 + \left(\sum_{i < 5} \binom{5}{i} + a^2 \right)^2$$

$$\left(\sum_{i < 5} \binom{5}{i} + \alpha^2 \right)^2$$

```

\begin{align}
x_{1} + y_{1} + \left( \sum_{i < 5} \binom{5}{i}
&+ a^{2} \right)^{2} \\
\left( \sum_{i < 5} \binom{5}{i} &+ \alpha^{2} \right)^{2}
\end{align}

```

$$x_1 + y_1 + \left(\sum_{i < 5} \binom{5}{i} + a^2 \right)^2$$

$$\left(\sum_{i < 5} \binom{5}{i} + \alpha^2 \right)^2$$

$$\begin{aligned}
 f(x) &= x + yz & g(x) &= x + y + z & (13) \\
 h(x) &= xy + xz + yz & k(x) &= (x + y)(x + z)(y + z)
 \end{aligned}$$

```

\begin{alignat}{2} \label{E:m13}
  f(x) &= x + yz & & \quad & g(x) &= x + y + z \\
  h(x) &= xy + xz + yz & & \quad & k(x) &= (x + y)(x + z) \\
 & & & & & (y + z) \notag
\end{alignat}

```

$$\begin{aligned}
x &= x \wedge (y \vee z) && \text{, by distributivity,} && (14) \\
&= (x \wedge y) \vee (x \wedge z) && \text{, by Condition (M),} \\
&= y \vee z
\end{aligned}$$

```

\begin{alignat}{2} \label{E:m13a}
x &= x \wedge (y \vee z) && \quad \text{\textit{, by}} \\
&&& \text{distributivity,} \\
&= (x \wedge y) \vee (x \wedge z) && \quad \text{\textit{, by}} \\
&&& \text{Condition (M),} \\
&&& \notag \\
&= y \vee z \notag \\
\end{alignat}

```

$$\begin{array}{l} x = 3, \\ y = 4, \\ z = 5; \end{array} \quad \text{or} \quad \begin{array}{l} x = 5, \\ y = 12, \\ z = 13. \end{array}$$

```
\[
  \begin{aligned}
    x &= 3, \\
    y &= 4, \\
    z &= 5;
  \end{aligned}
  \text{\quad or \quad}
  \begin{aligned}
    x &= 5, \\
    y &= 12, \\
    z &= 13.
  \end{aligned}
\]
```

$$\begin{aligned}
h(x) &= \int \left(\frac{f(x) + g(x)}{1 + f^2(x)} + \frac{1 + f(x)g(x)}{\sqrt{1 - \sin x}} \right) dx \\
&= \int \frac{1 + f(x)}{1 + g(x)} dx - 2 \tan^{-1}(x - 2)
\end{aligned} \tag{15}$$

```

\begin{equation}
\begin{aligned}
\begin{aligned}
\begin{aligned}
h(x) &= \int \left( \frac{f(x) + g(x)}{1 + f^2(x)} + \right. \\
&\quad \left. \frac{1 + f(x)g(x)}{\sqrt{1 - \sin x}} \right) dx \\
&= \int \frac{1 + f(x)}{1 + g(x)} dx - 2 \tan^{-1}(x - 2)
\end{aligned}
\end{aligned}
\end{aligned}
\end{equation}

```

$$\begin{array}{l} x = 3, \\ y = 4, \\ z = 5; \end{array} \quad \text{or} \quad \begin{array}{l} x = 5, \\ y = 12, \\ z = 13. \end{array}$$

```
\[
\begin{aligned}[b]
  x &= 3, \\
  y &= 4, \\
  z &= 5;
\end{aligned}
\text{\quad or \quad}
\begin{aligned}[b]
  x &= 5, \\
  y &= 12, \\
  z &= 13.
\end{aligned}
\]
```

$$\begin{aligned}
f &= (x_1x_2x_3x_4x_5x_6)^2 \\
&= (x_1x_2x_3x_4x_5 + x_1x_3x_4x_5x_6 + x_1x_2x_4x_5x_6 + x_1x_2x_3x_5x_6)^2 \\
&= (x_1x_2x_3x_4 + x_1x_2x_3x_5 + x_1x_2x_4x_5 + x_1x_3x_4x_5 + x_2x_3x_4x_5)^2
\end{aligned} \tag{16}$$

```

\begin{equation} \label{E:m15}
\begin{split}
f &= (x_{\{1\}} x_{\{2\}} x_{\{3\}} x_{\{4\}} x_{\{5\}} x_{\{6\}})^{\{2\}} \\
&= (x_{\{1\}} x_{\{2\}} x_{\{3\}} x_{\{4\}} x_{\{5\}} + \\
&\quad x_{\{1\}} x_{\{3\}} x_{\{4\}} x_{\{5\}} x_{\{6\}} + \\
&\quad x_{\{1\}} x_{\{2\}} x_{\{4\}} x_{\{5\}} x_{\{6\}} + \\
&\quad x_{\{1\}} x_{\{2\}} x_{\{3\}} x_{\{5\}} x_{\{6\}})^{\{2\}} \\
&= (x_{\{1\}} x_{\{2\}} x_{\{3\}} x_{\{4\}} + x_{\{1\}} x_{\{2\}} x_{\{3\}} \\
&\quad x_{\{5\}} + x_{\{1\}} x_{\{2\}} x_{\{4\}} x_{\{5\}} + x_{\{1\}} x_{\{3\}} \\
&\quad x_{\{4\}} x_{\{5\}} + x_{\{2\}} x_{\{3\}} x_{\{4\}} x_{\{5\}})^{\{2\}}
\end{split}
\end{equation}

```

$$f = (x_1x_2x_3x_4x_5x_6)^2$$

$$= (x_1x_2x_3x_4x_5 + x_1x_3x_4x_5x_6 + x_1x_2x_4x_5x_6 + x_1x_2x_3x_5x_6)^2 \quad (17)$$

$$= (x_1x_2x_3x_4 + x_1x_2x_3x_5 + x_1x_2x_4x_5 + x_1x_3x_4x_5 + x_2x_3x_4x_5)^2,$$

$$g = y_1y_2y_3. \quad (18)$$

```

\begin{align} \label{E:ml6}
  \begin{split}
    f &= (x_{\{1\}} x_{\{2\}} x_{\{3\}} x_{\{4\}} x_{\{5\}} x_{\{6\}})^{\{2\}} \\
    &= (x_{\{1\}} x_{\{2\}} x_{\{3\}} x_{\{4\}} x_{\{5\}} +
      x_{\{1\}} x_{\{3\}} x_{\{4\}} x_{\{5\}} x_{\{6\}} +
      x_{\{1\}} x_{\{2\}} x_{\{4\}} x_{\{5\}} x_{\{6\}} +
      x_{\{1\}} x_{\{2\}} x_{\{3\}} x_{\{5\}} x_{\{6\}})^{\{2\}} \\
    &= (x_{\{1\}} x_{\{2\}} x_{\{3\}} x_{\{4\}} +
      x_{\{1\}} x_{\{2\}} x_{\{3\}} x_{\{5\}} +
      x_{\{1\}} x_{\{2\}} x_{\{4\}} x_{\{5\}} +
      x_{\{1\}} x_{\{3\}} x_{\{4\}} x_{\{5\}} +
      x_{\{2\}} x_{\{3\}} x_{\{4\}} x_{\{5\}})^{\{2\}},
  \end{split} \\
  g &= y_{\{1\}} y_{\{2\}} y_{\{3\}}. \quad \label{E:ml7}
\end{align}

```


$$h(x) = \int \left(\frac{f(x) + g(x)}{1 + f^2(x)} + \frac{1 + f(x)g(x)}{\sqrt{1 - \sin x}} \right) dx \quad (19)$$

The reader may find the following form easier to read:

$$= \int \frac{1 + f(x)}{1 + g(x)} dx - 2 \tan^{-1}(x - 2)$$

```

\begin{align} \label{E:m18}
  h(x) &= \int \left( \frac{f(x) + g(x)}{1 + f^2(x)} + \right. \\
  &\quad \left. \frac{1 + f(x)g(x)}{\sqrt{1 - \sin x}} \right) dx \\
\intertext{The reader may find the following}
  &\quad \text{form easier to read:} \\
  &= \int \frac{1 + f(x)}{1 + g(x)} dx - \\
  &\quad 2 \tan^{-1}(x - 2) \notag
\end{align}

```

$$f(x) = x + yz$$

$$g(x) = x + y + z$$

The reader also may find the following polynomials useful:

$$h(x) = xy + xz + yz$$

$$k(x) = (x + y)(x + z)(y + z)$$

```
\begin{alignat*}{2}
  f(x) &= x + yz & \quad g(x) &= x + y + z \\
  \intertext{The reader also may find the following}
  \intertext{polynomials useful:}
  h(x) &= xy + xz + yz \\
  & & \quad k(x) &= (x + y)(x + z)(y + z)
\end{alignat*}
```

$$f(x) = \begin{cases} -x^2, & \text{if } x \leq 0; \\ 0 + x, & \text{if } 0 \leq x \leq 1; \\ x^2, & \text{otherwise.} \end{cases} \quad (20)$$

```
\begin{equation} \label{E:ml10}
  f(x) =
    \begin{cases}
      -x^{2}, & \&\text{if } \$x \ \leq 0\$; \\
      0 + x, & \&\text{if } \$ 0 \ \leq x \ \leq 1\$; \\
      x^{2}, & \&\text{otherwise.}
    \end{cases}
\end{equation}
```

$$\begin{aligned}
f &= (x_1x_2x_3x_4x_5x_6)^2 \\
&= (x_1x_2x_3x_4x_5 + x_1x_3x_4x_5x_6 + x_1x_2x_4x_5x_6 + x_1x_2x_3x_5x_6)^2 \\
&= (x_1x_2x_3x_4 + x_1x_2x_3x_5 + x_1x_2x_4x_5 + x_1x_3x_4x_5 + x_2x_3x_4x_5)^2 \\
g &= y_1y_2y_3 \tag{21}
\end{aligned}$$

$$h = z_1^2z_2^2z_3^2 \tag{22}$$

```

\begin{gather} \label{E:ml11}
  \begin{split}
    f &= (x_{\{1\}} x_{\{2\}} x_{\{3\}} x_{\{4\}} x_{\{5\}} x_{\{6\}})^{\{2\}} \\
    &= (x_{\{1\}} x_{\{2\}} x_{\{3\}} x_{\{4\}} x_{\{5\}} \\
    &\quad + x_{\{1\}} x_{\{3\}} x_{\{4\}} x_{\{5\}} x_{\{6\}} + \\
    &\quad x_{\{1\}} x_{\{2\}} x_{\{4\}} x_{\{5\}} x_{\{6\}} + \\
    &\quad x_{\{1\}} x_{\{2\}} x_{\{3\}} x_{\{5\}} x_{\{6\}})^{\{2\}} \\
    &= (x_{\{1\}} x_{\{2\}} x_{\{3\}} x_{\{4\}} + \\
    &\quad x_{\{1\}} x_{\{2\}} x_{\{3\}} x_{\{5\}} + \\
    &\quad x_{\{1\}} x_{\{2\}} x_{\{4\}} x_{\{5\}} + \\
    &\quad x_{\{1\}} x_{\{3\}} x_{\{4\}} x_{\{5\}} + \\
    &\quad x_{\{2\}} x_{\{3\}} x_{\{4\}} x_{\{5\}})^{\{2\}}
  \end{split} \\
\end{gather}
\begin{align*}
  g &= y_{\{1\}} y_{\{2\}} y_{\{3\}} \\
  h &= z_{\{1\}}^{\{2\}} z_{\{2\}}^{\{2\}} z_{\{3\}}^{\{2\}}
\end{align*}
\end{gather}

```

$$a = b + c, \tag{23}$$

$$d = e + f, \tag{24}$$

$$x = y + z, \tag{25}$$

$$u = v + w.$$

```
{\allowdisplaybreaks
\begin{align} \label{E:ml14}
  \allowdisplaybreaks
  a &= b + c, \\
  d &= e + f, \\
  x &= y + z, \\
  u &= v + w. \notag
\end{align}
}
```