

CLIP-ART BOOK OF

**CARTOON-STYLE
ILLUSTRATIONS**

About This Book

There is an abundance of good "clip" art material on the market today. Though widely used in the advertising field "clip" art is hardly known to the non-professional in search of ready-to-use art for personalized greeting cards, announcements and invitations, organizational newsletters, and the like. This book, intended for popular distribution, is meant to fill that need. We hope that it will also serve as an auxiliary source of reference for artists and printers as well.

Clip-Art Book of Cartoon-Style Illustrations has a number of features to recommend it. All illustrative matter is sectioned off in logical categories and alphabetically indexed, thus making it simple to locate the particular illustration you're looking for. Once found, the illustration may be copied, traced, or used directly from the pages as the occasion warrants. All illustrations in the picture section were hand drawn exclusively for this book and may with certain restrictions be reproduced by the reader for purposes other than broad syndication.

In addition to serving as a veritable compendium of ready-to-use art, this book contains helpful information on supplies and equipment, studio methods and techniques, lettering and typography—all clearly described and illustrated.

We know you'll like this book and are confident that it will be exactly what you had been looking for a long time.

THE PUBLISHERS

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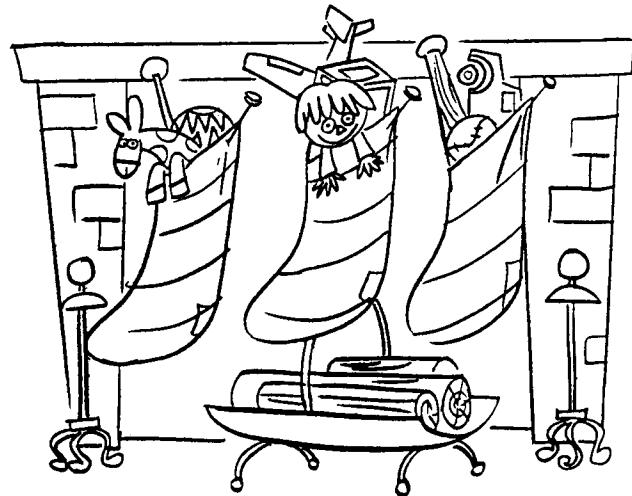
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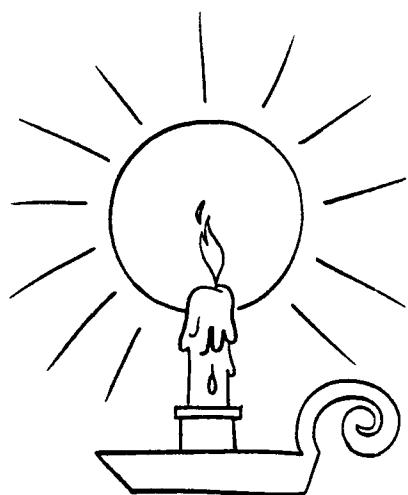
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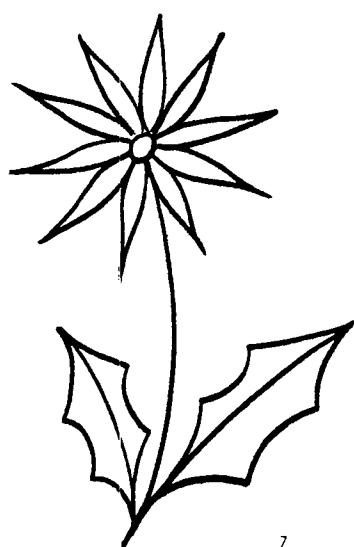
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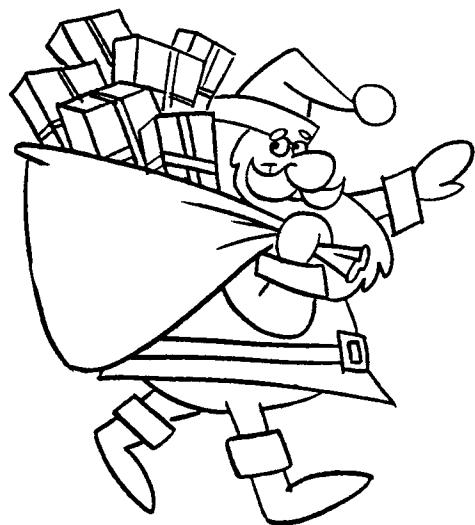
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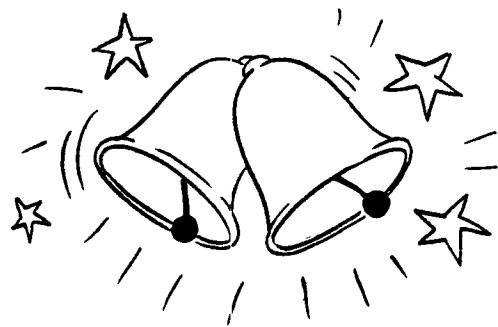
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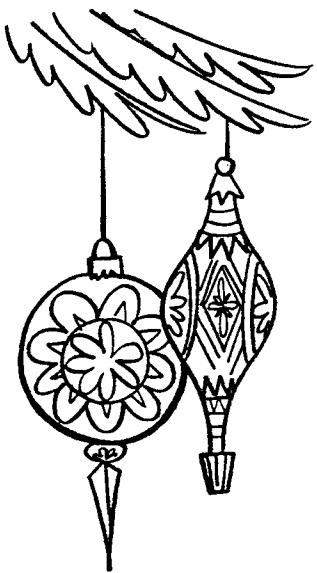
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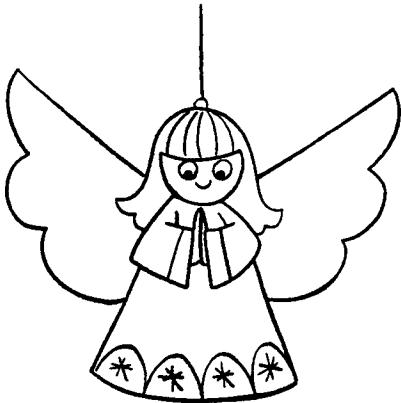
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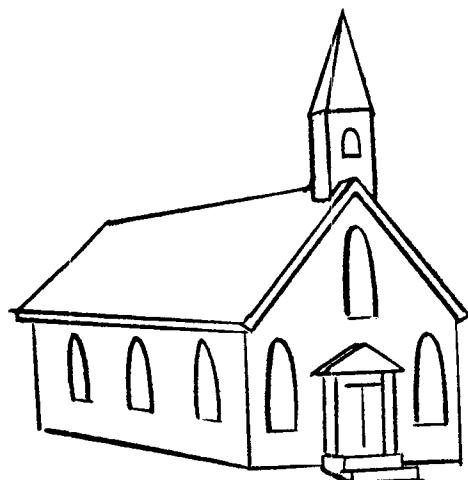
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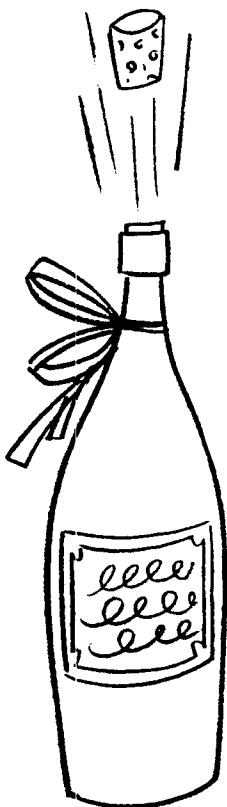
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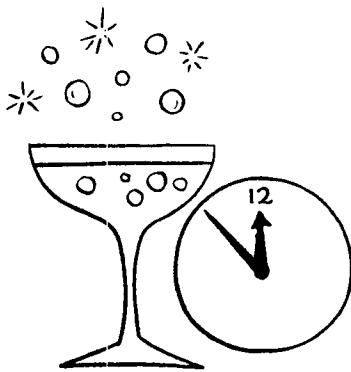
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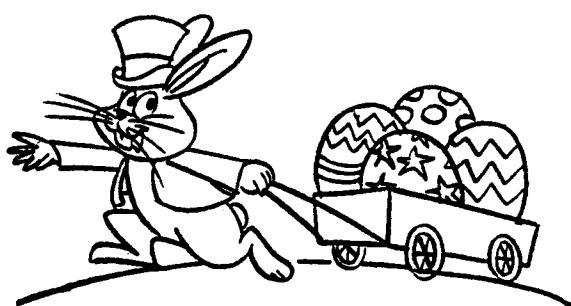
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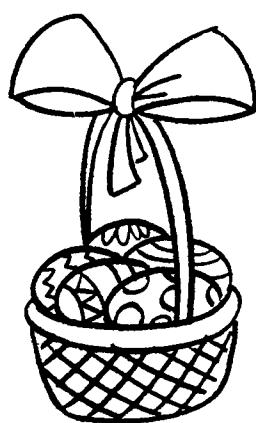
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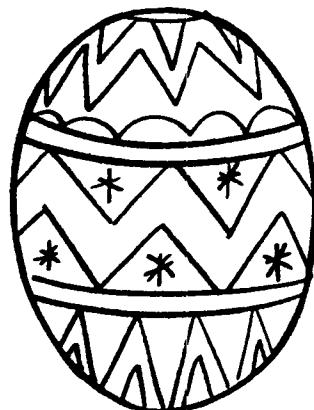
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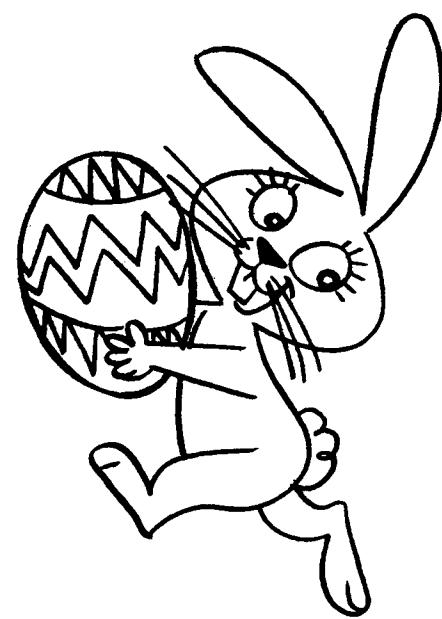
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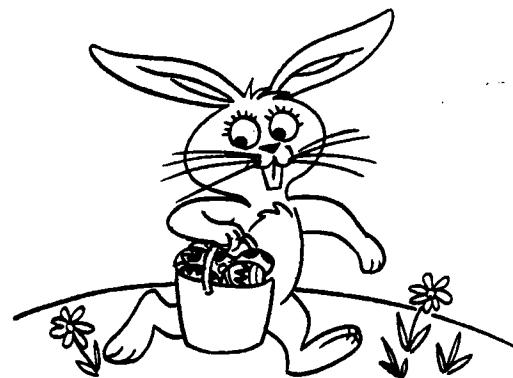
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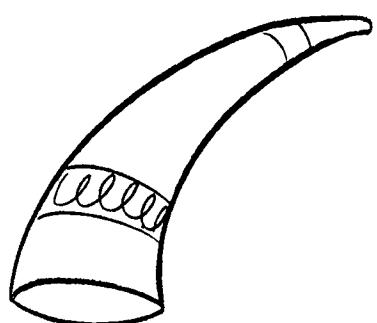
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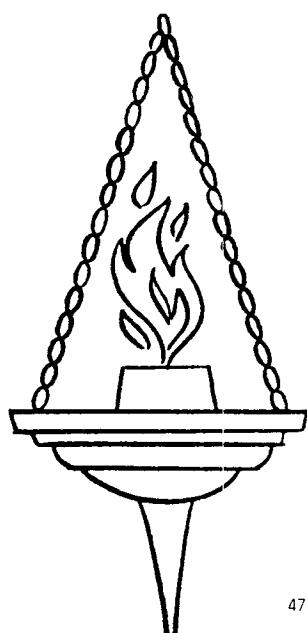
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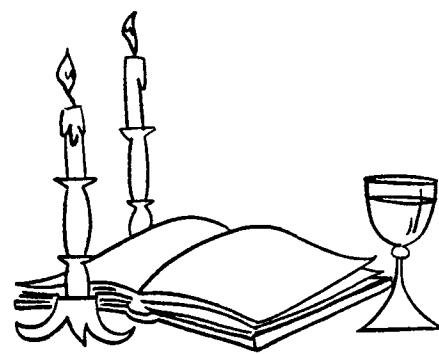
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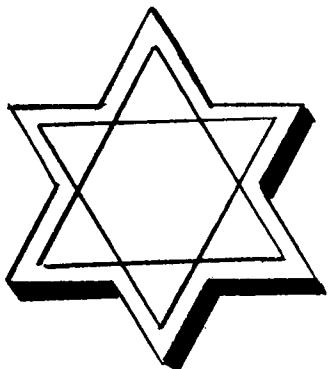
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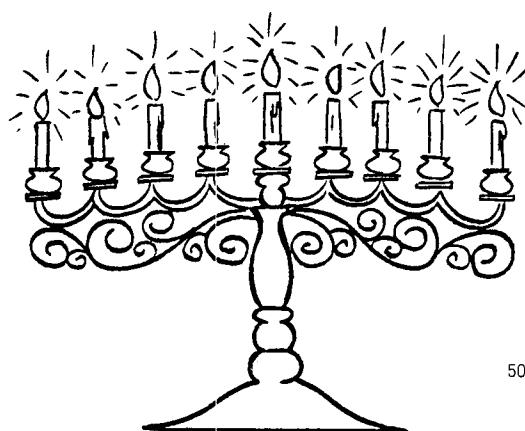
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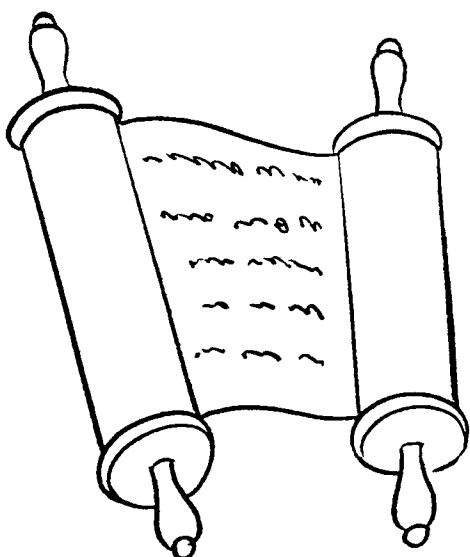
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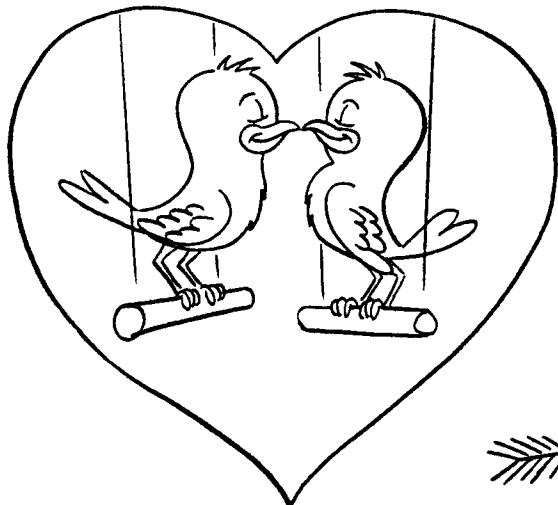
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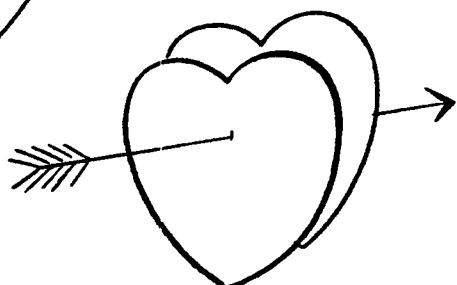
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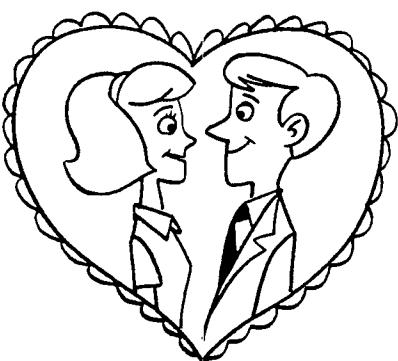
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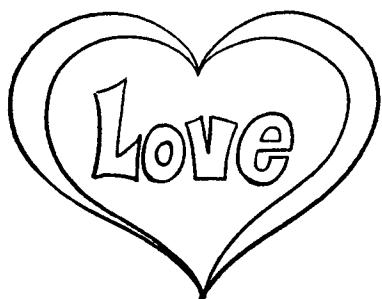
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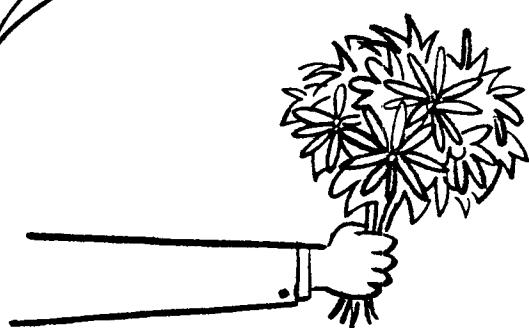
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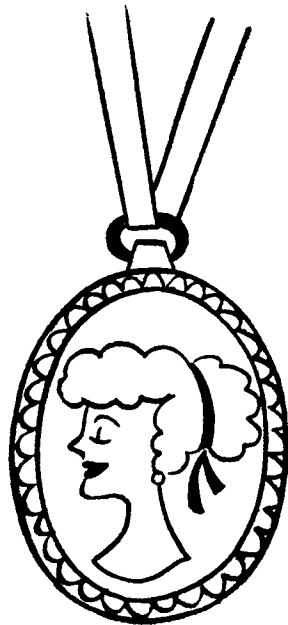
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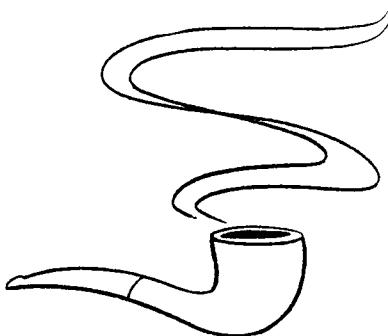
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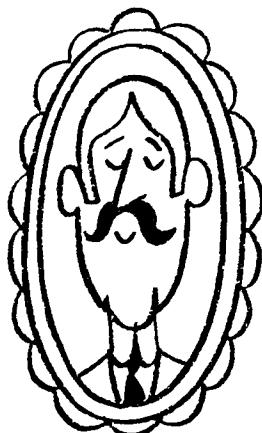
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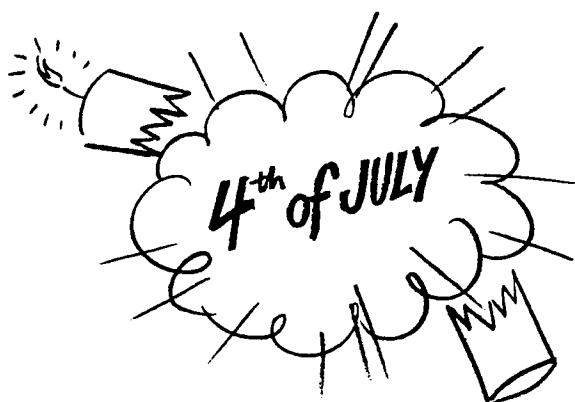
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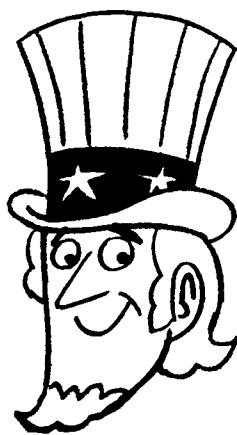
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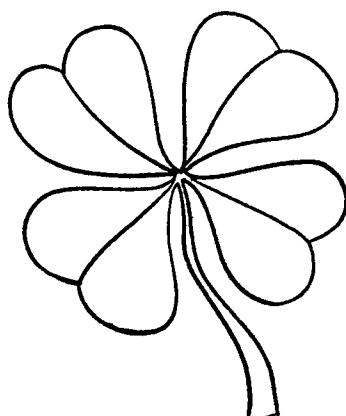
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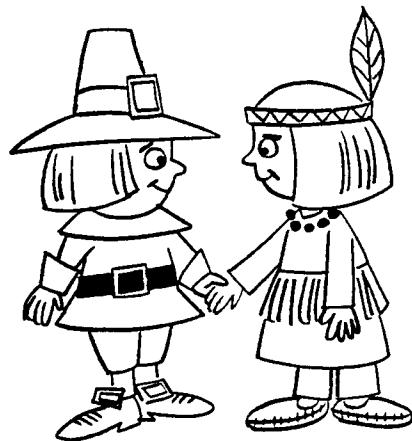
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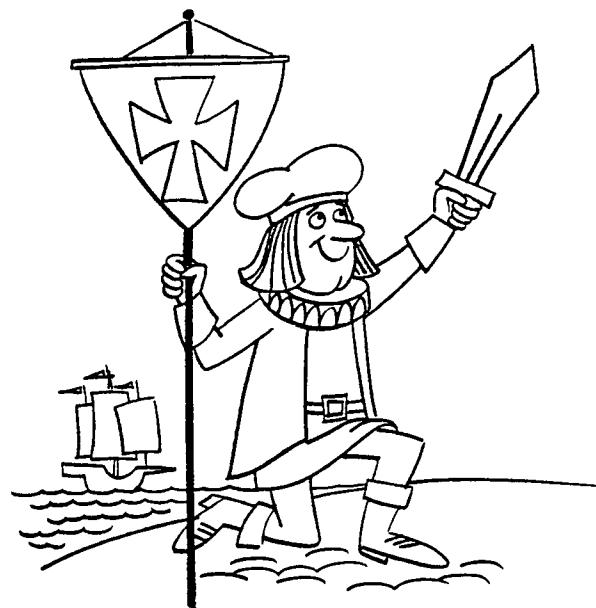
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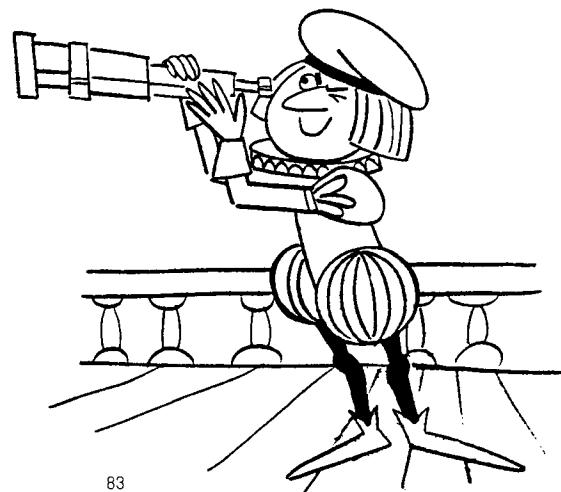
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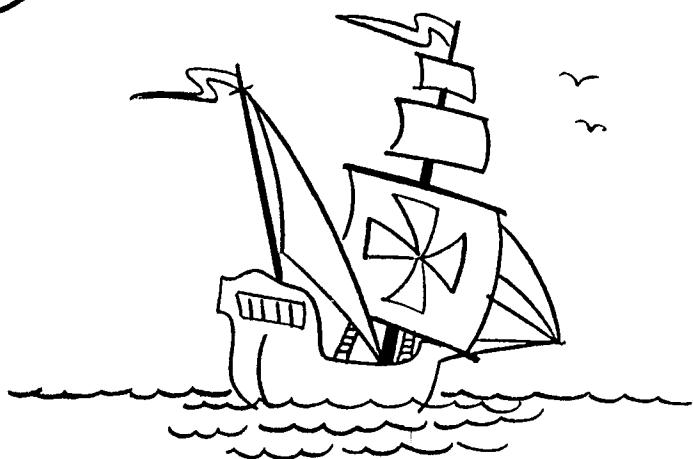
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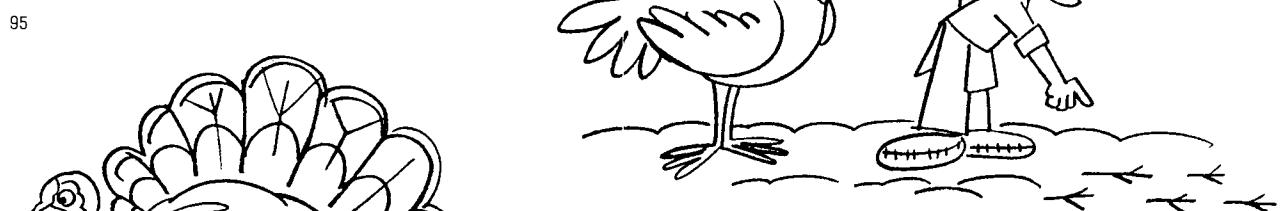


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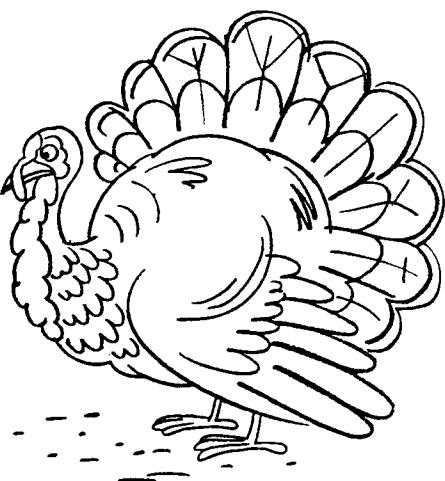
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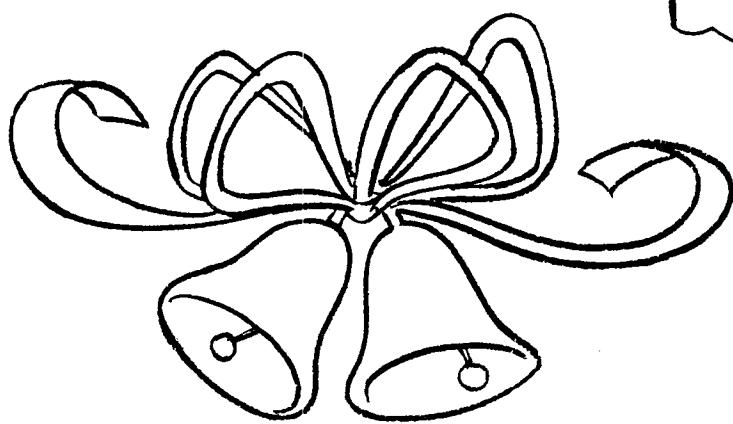
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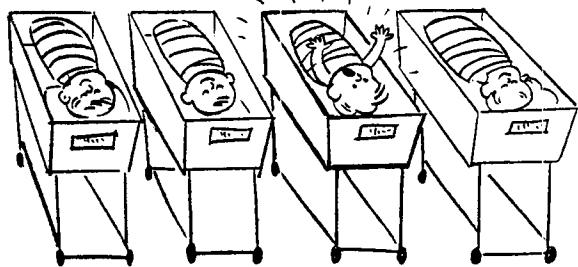
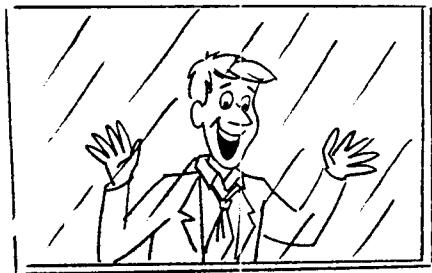
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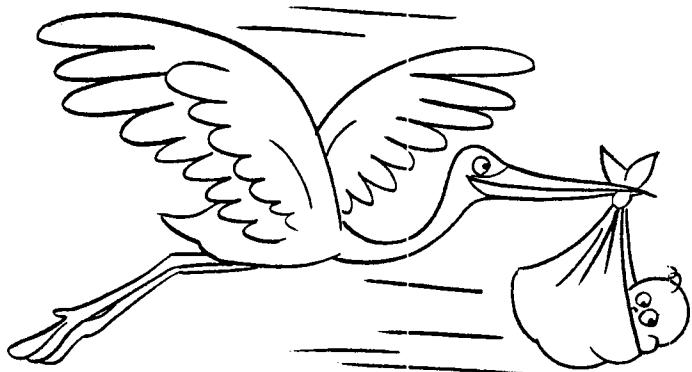
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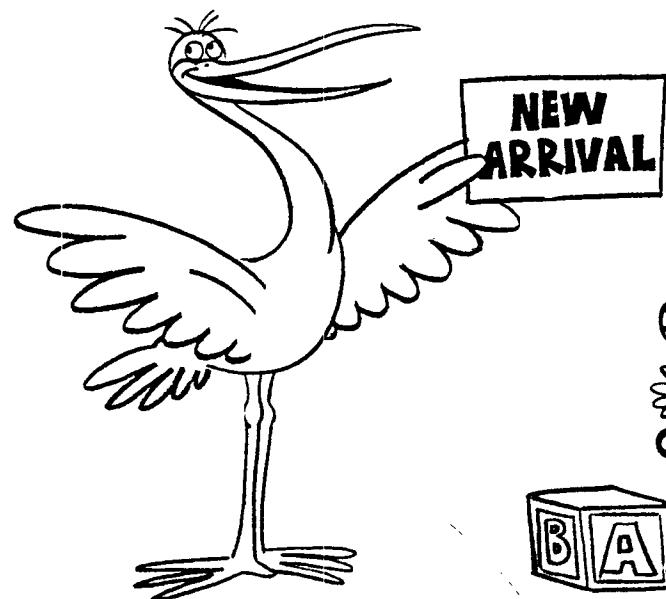
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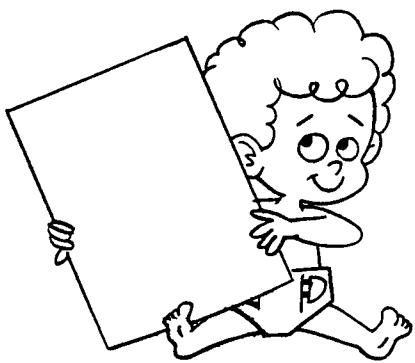
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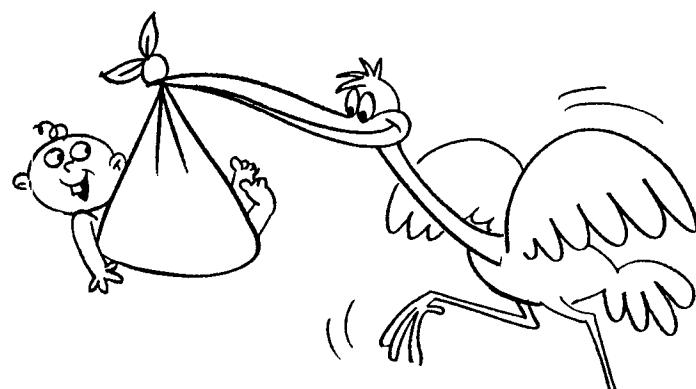
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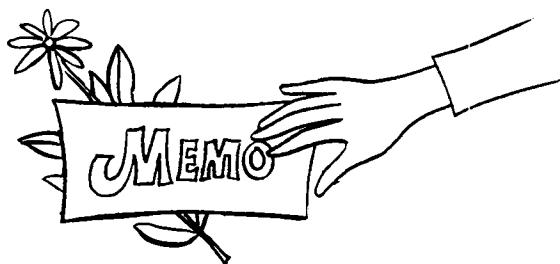
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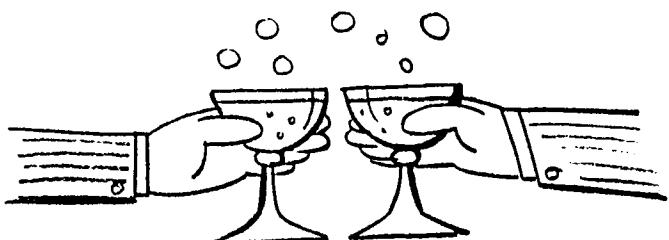
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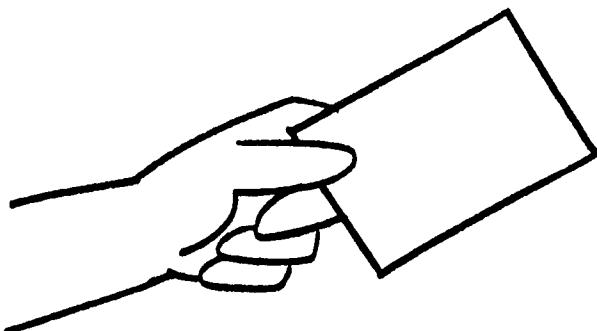
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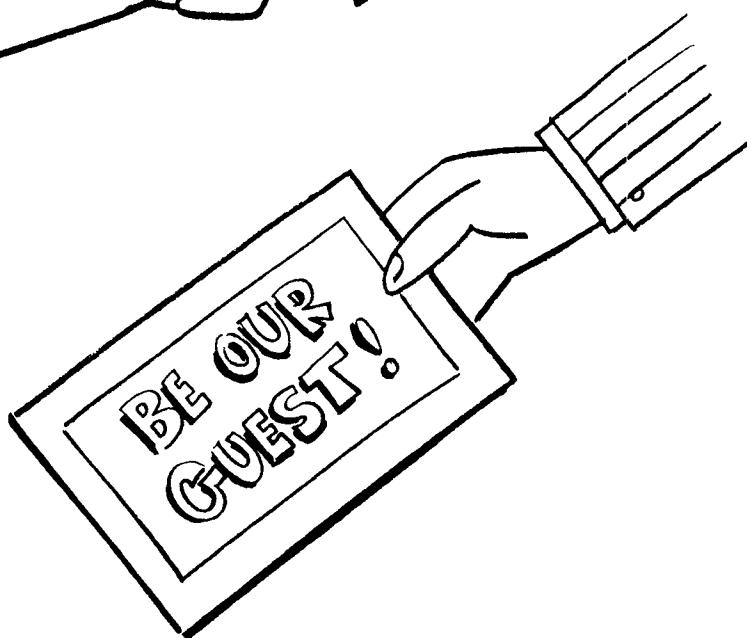
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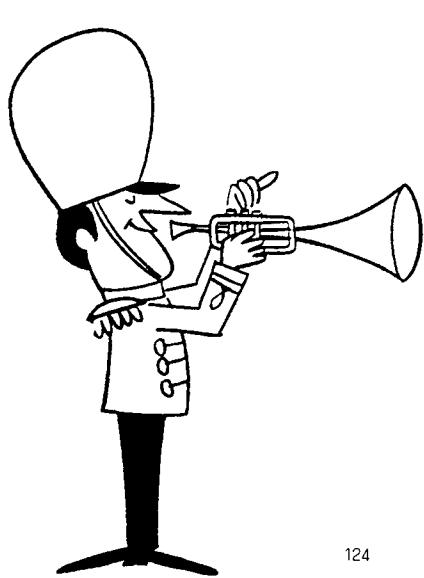
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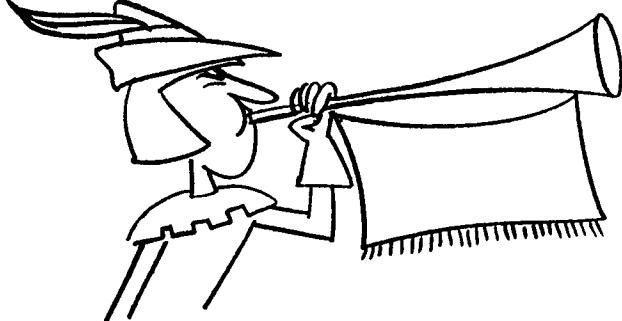
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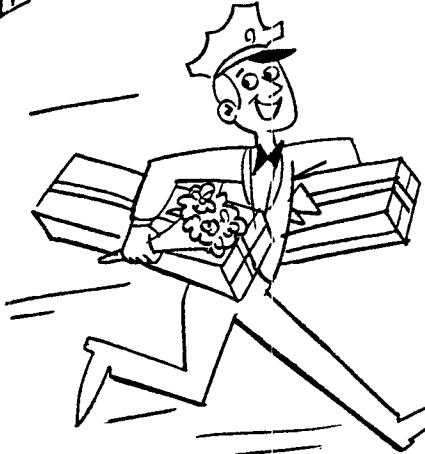
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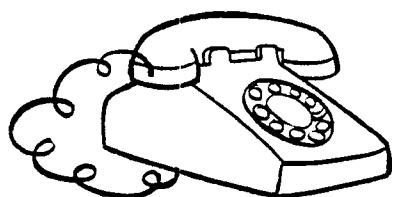
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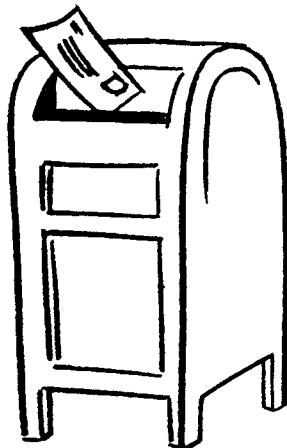
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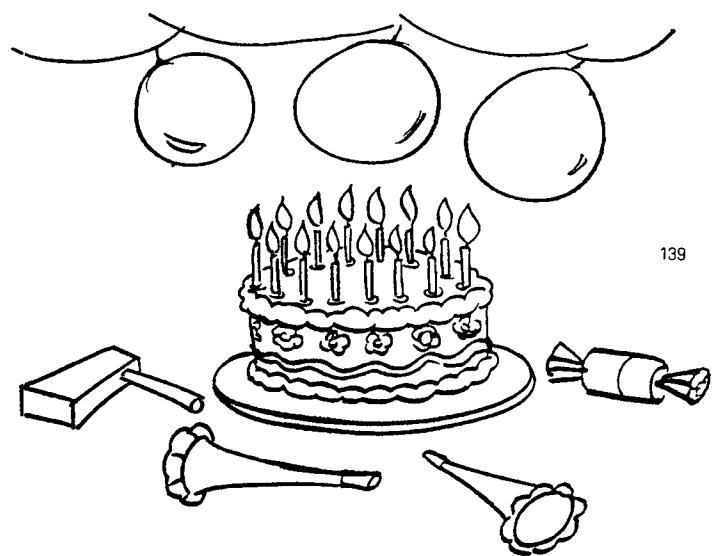
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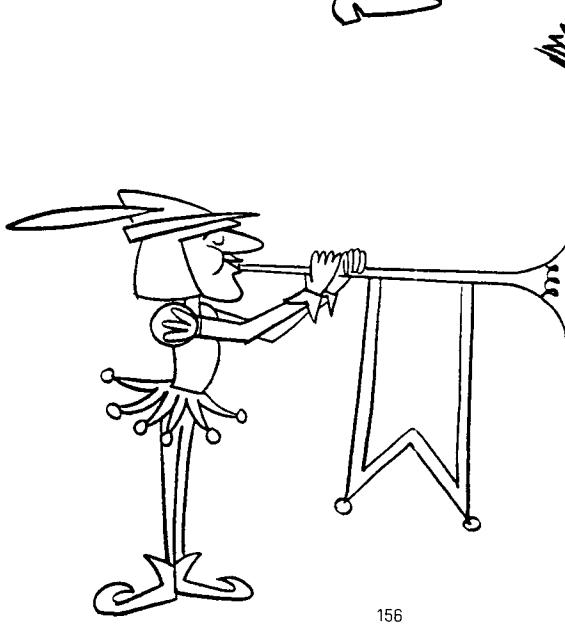
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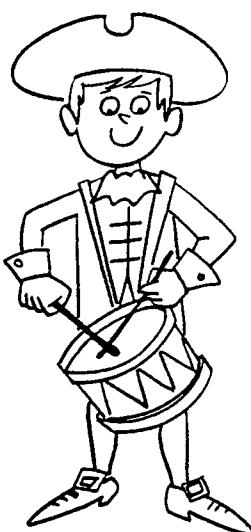
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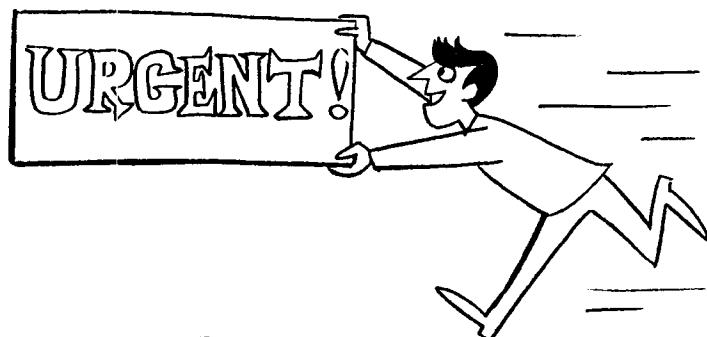
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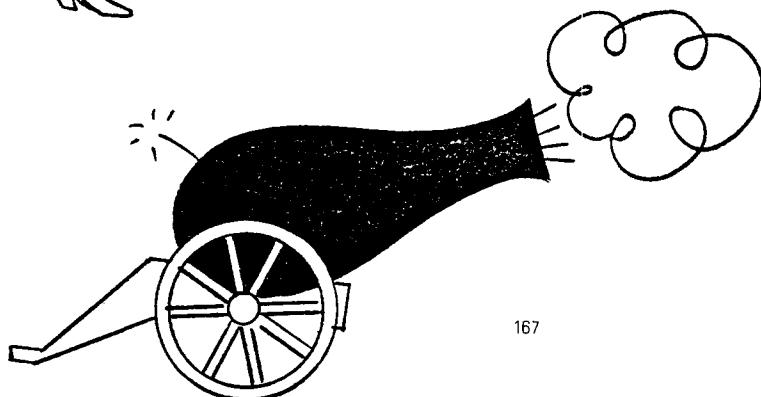
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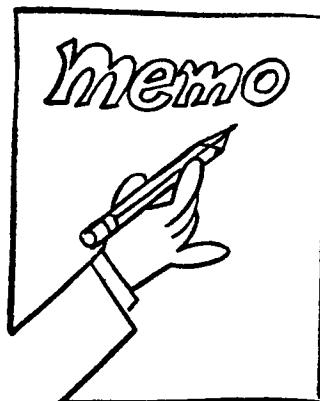
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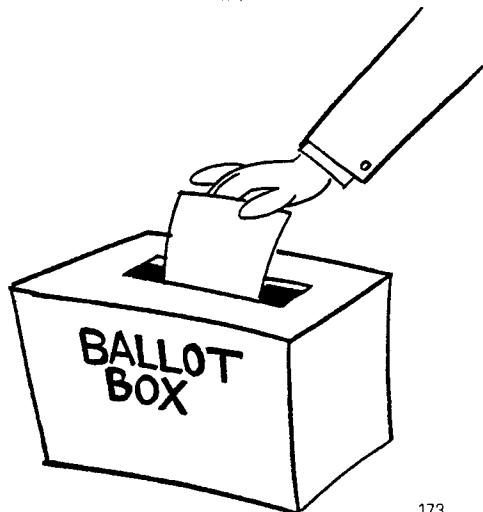
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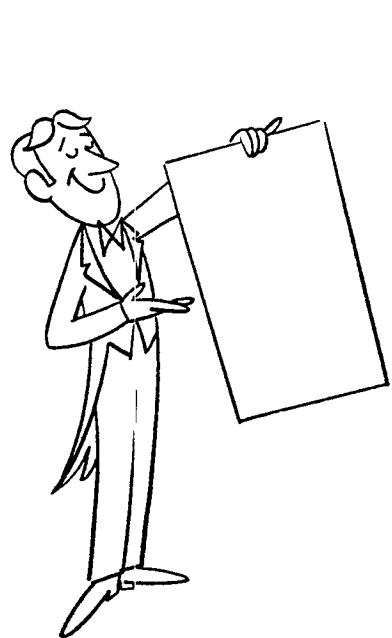
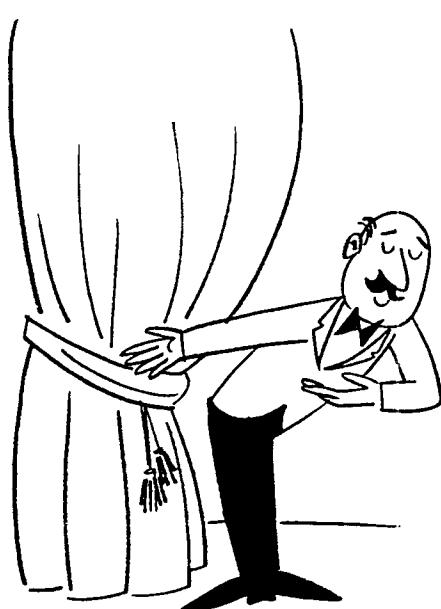


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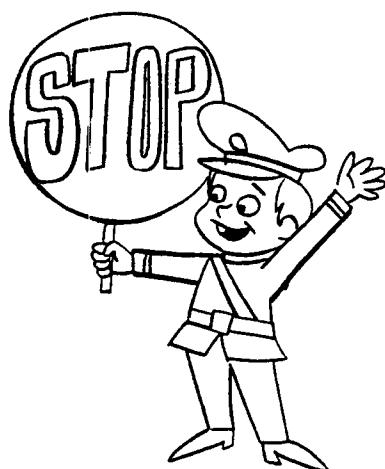
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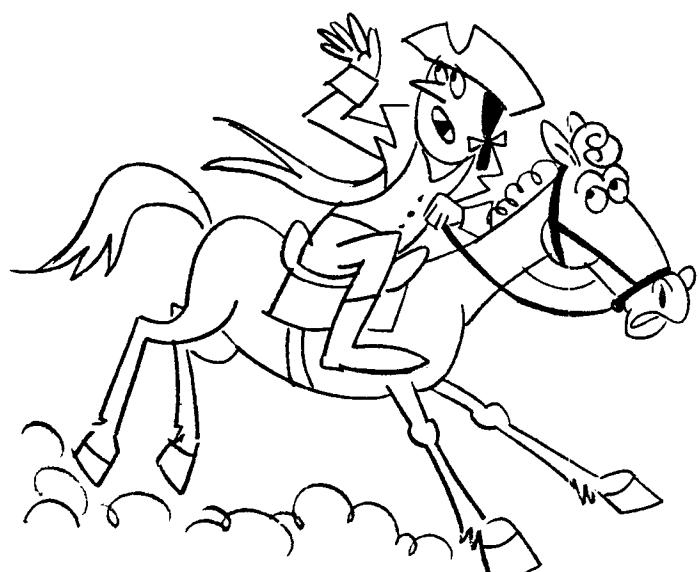
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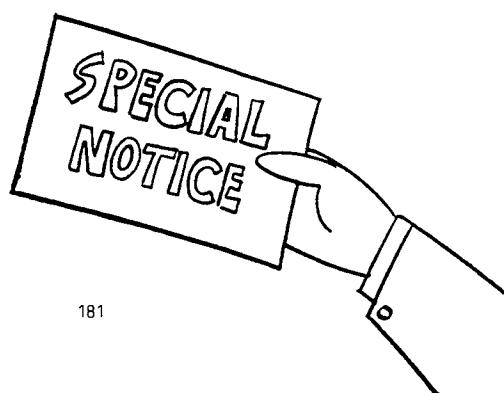
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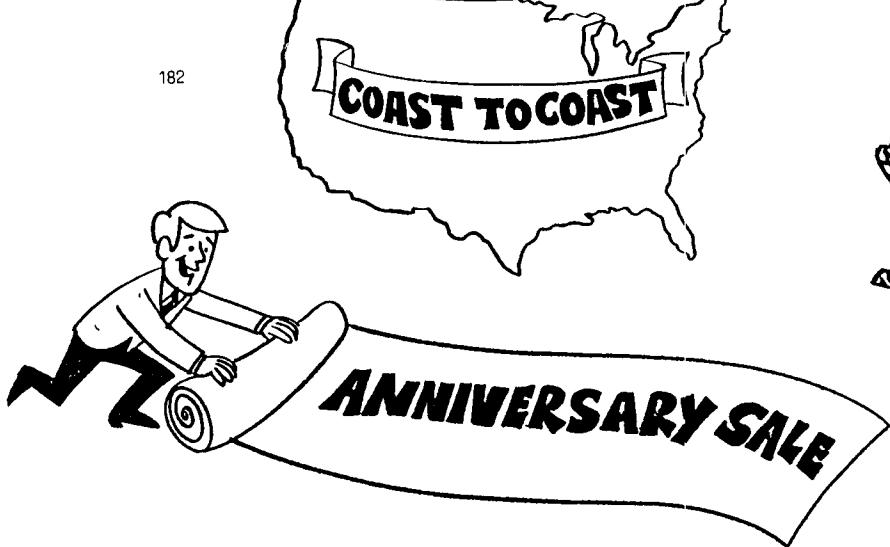
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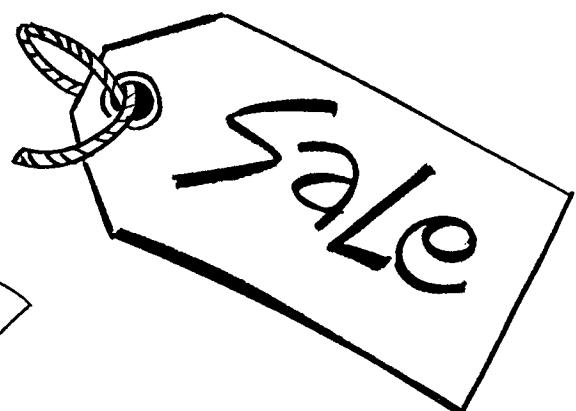
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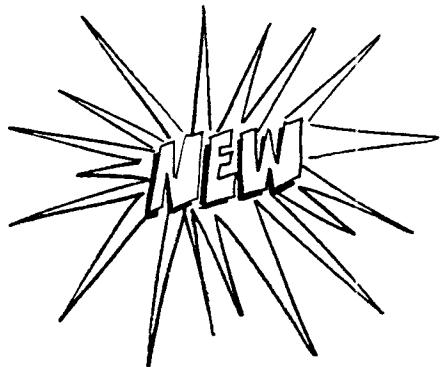
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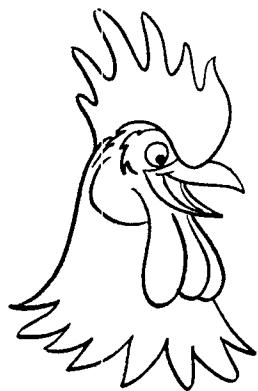
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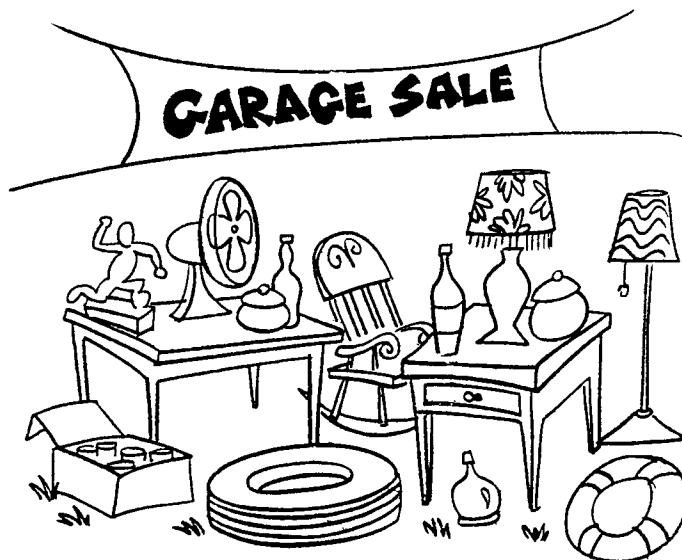
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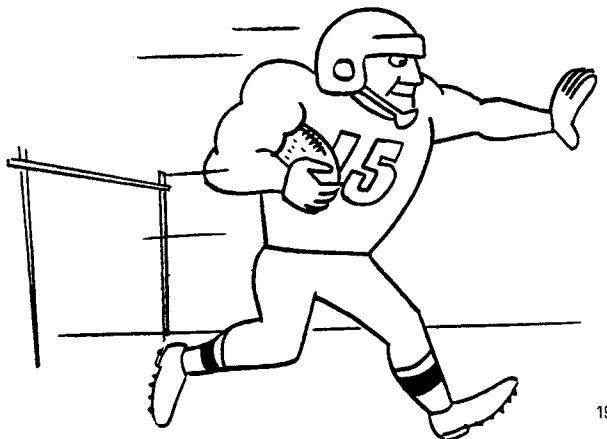
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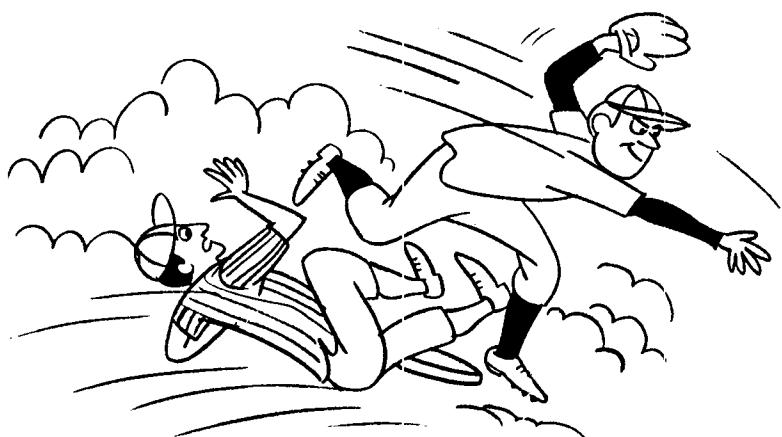
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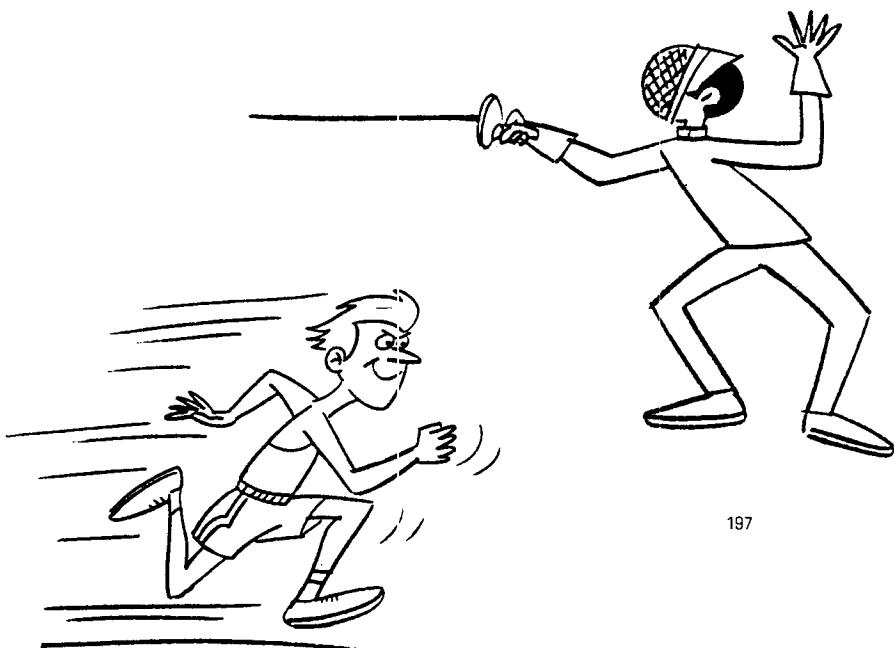
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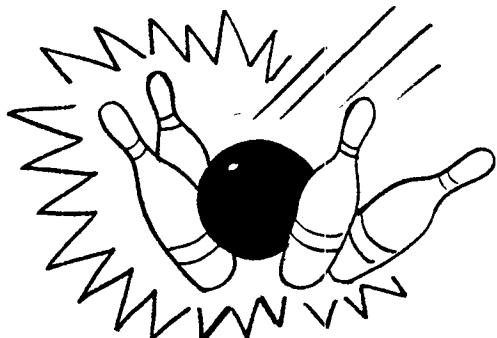


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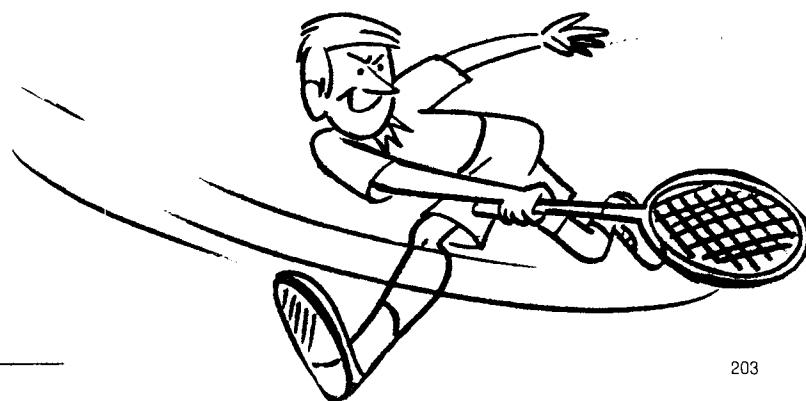
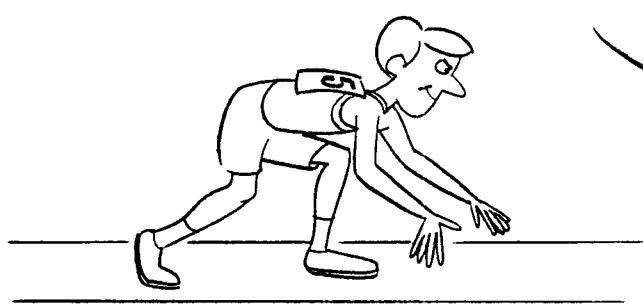
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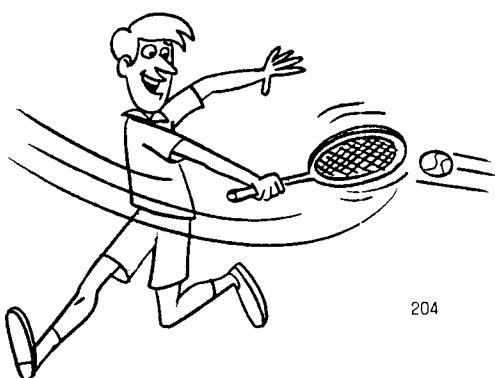
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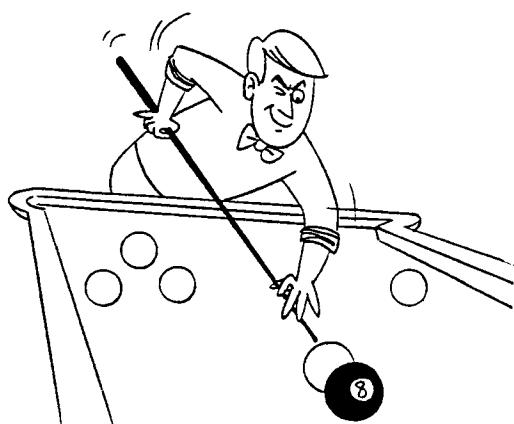


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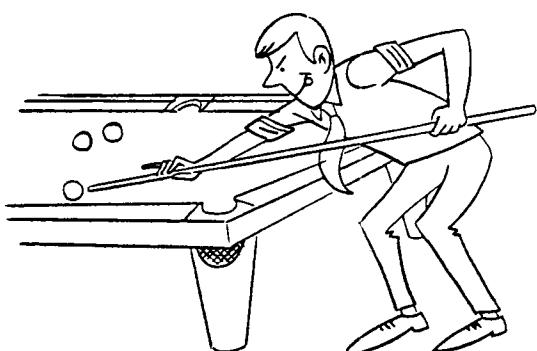
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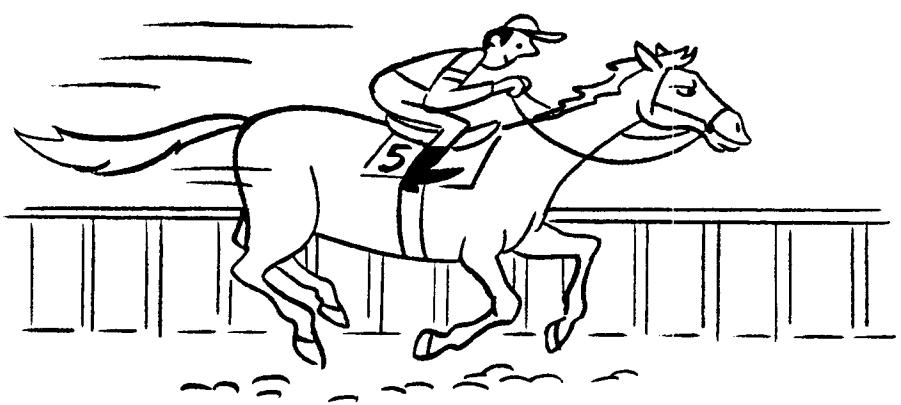
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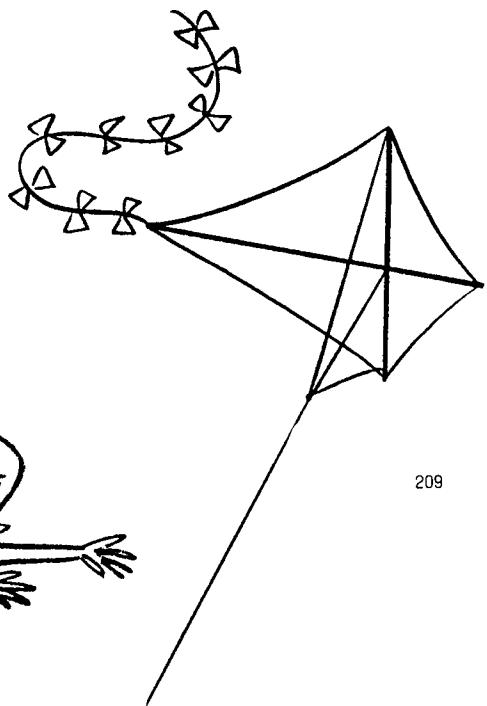
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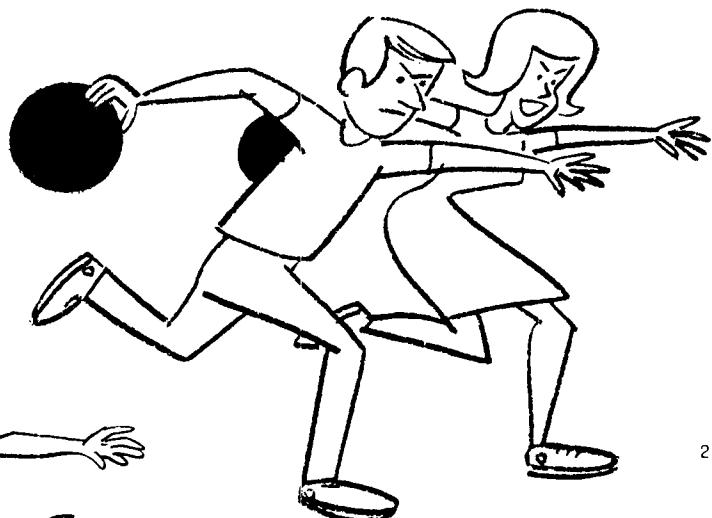
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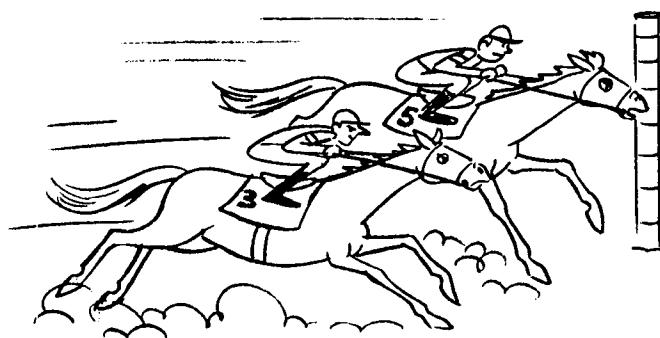
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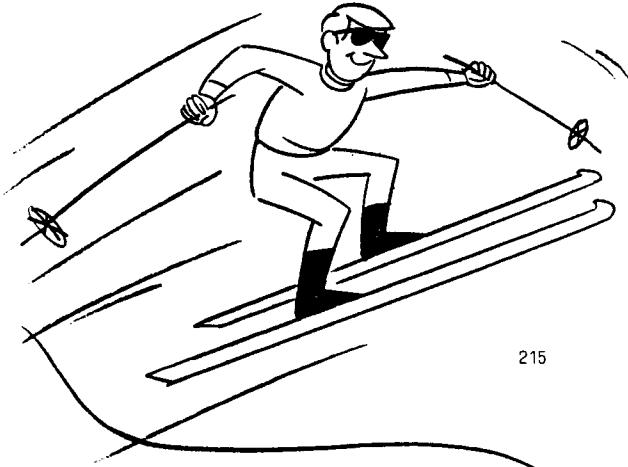
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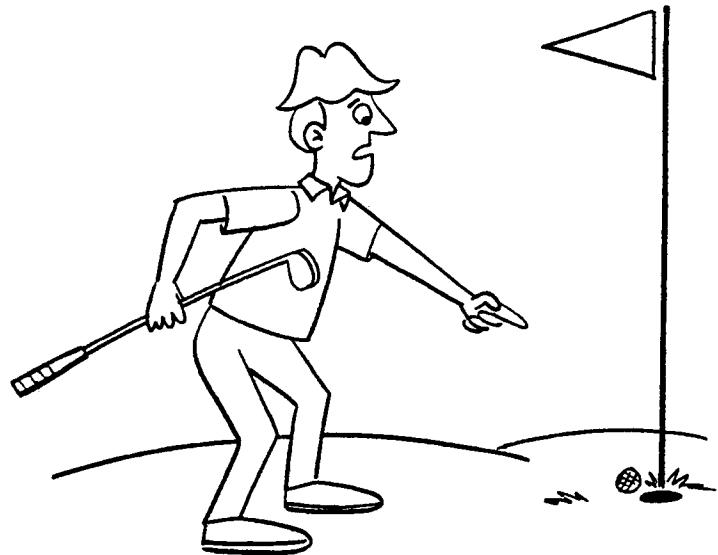
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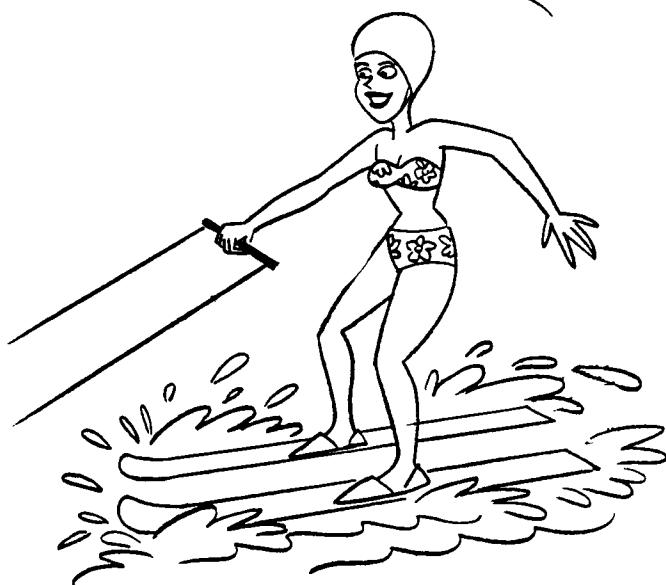
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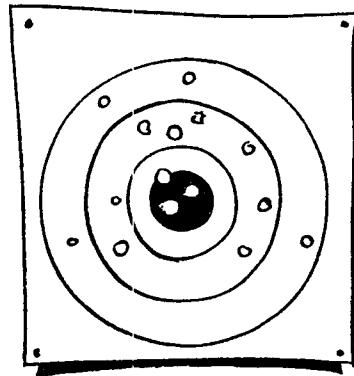
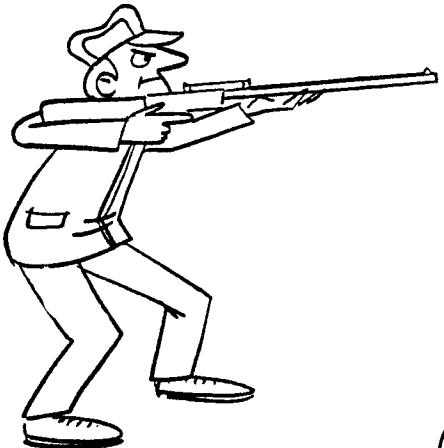
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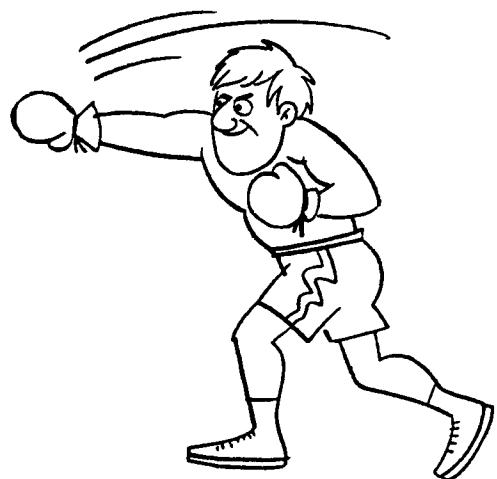
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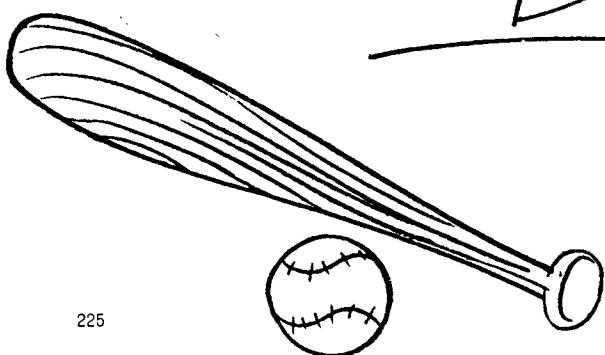


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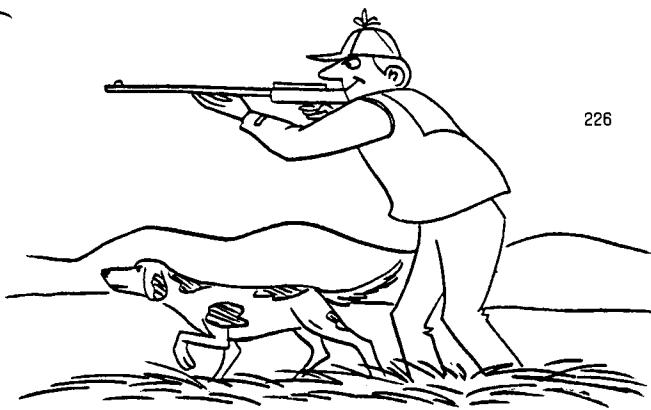


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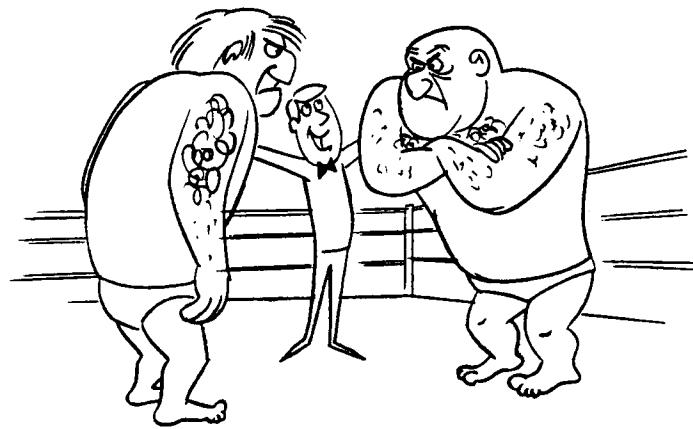
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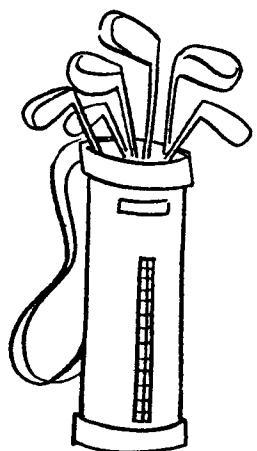
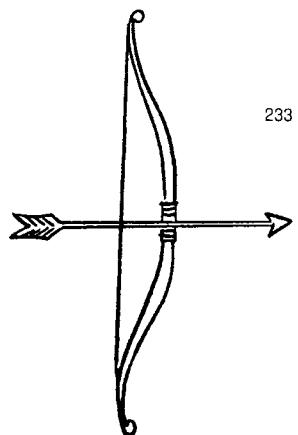
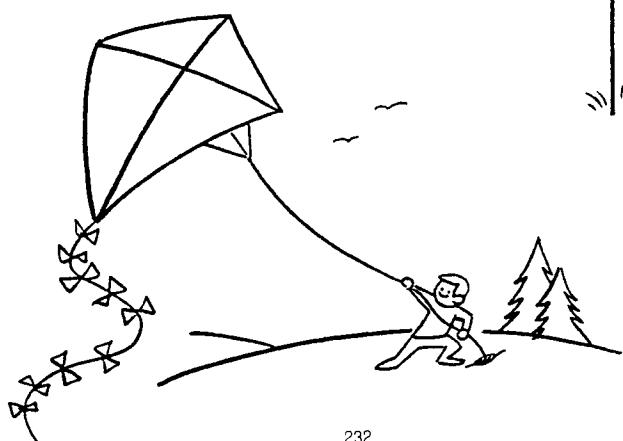
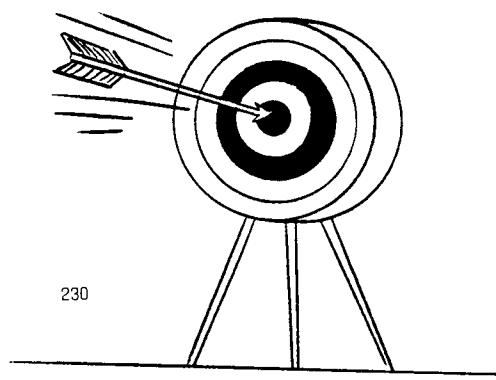
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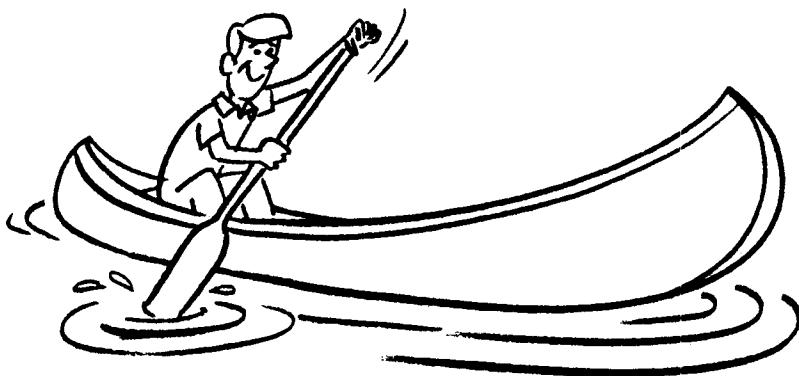


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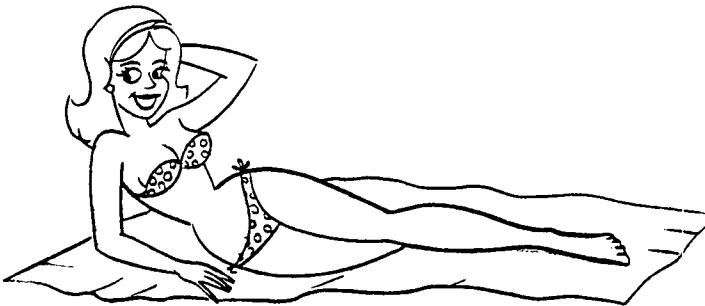




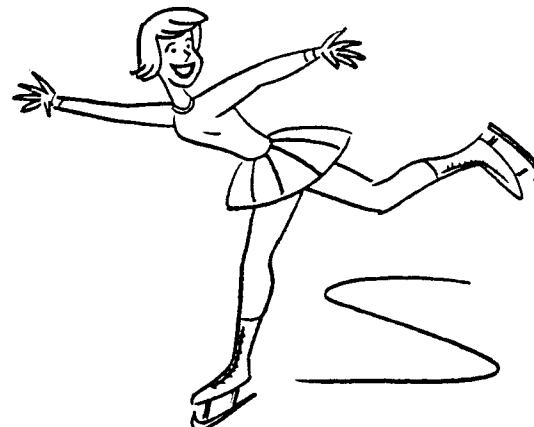
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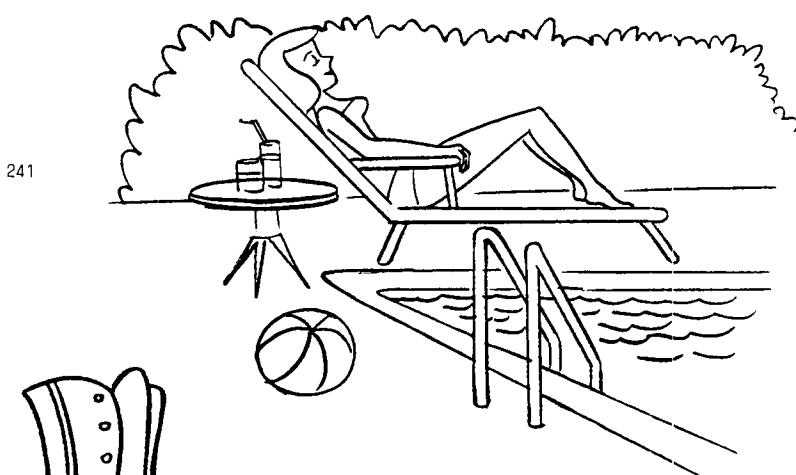
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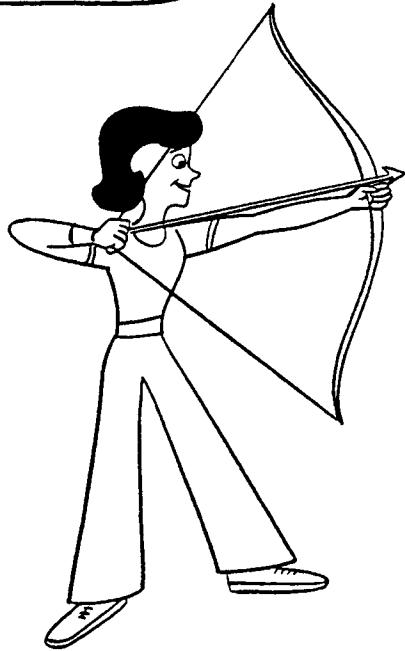
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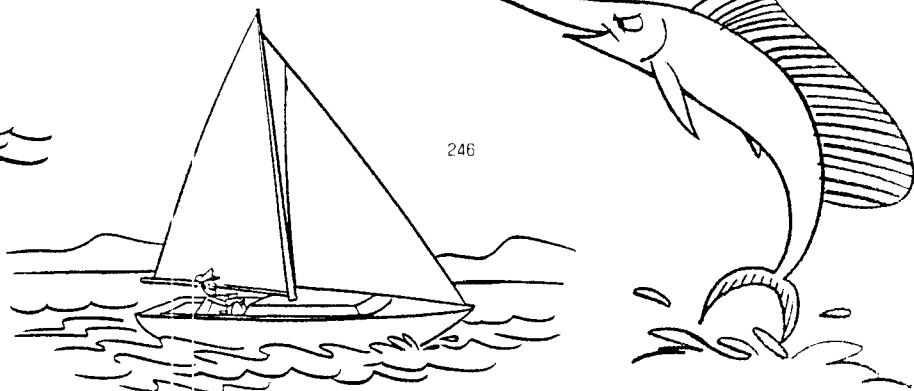
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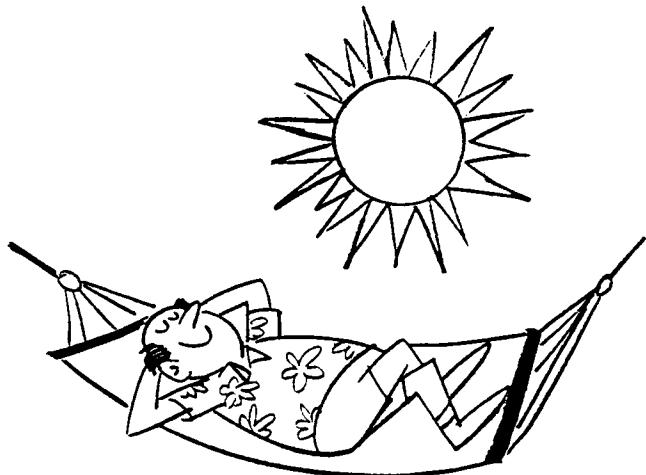
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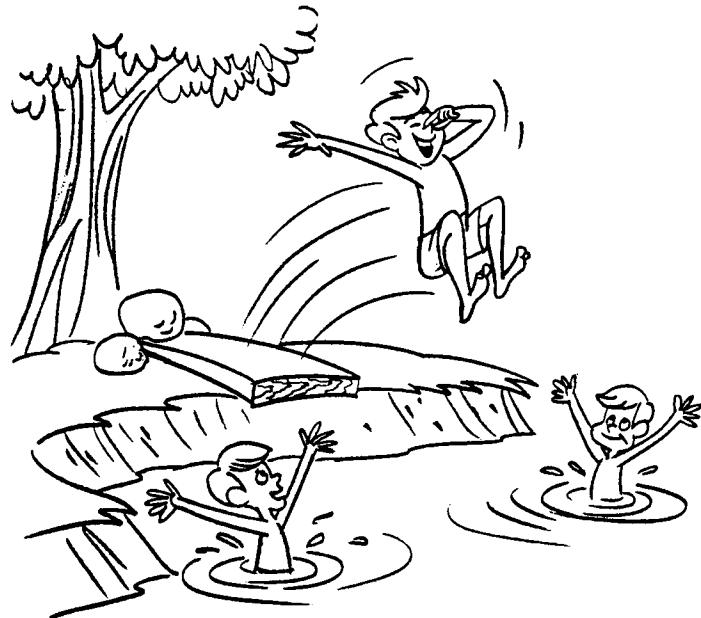
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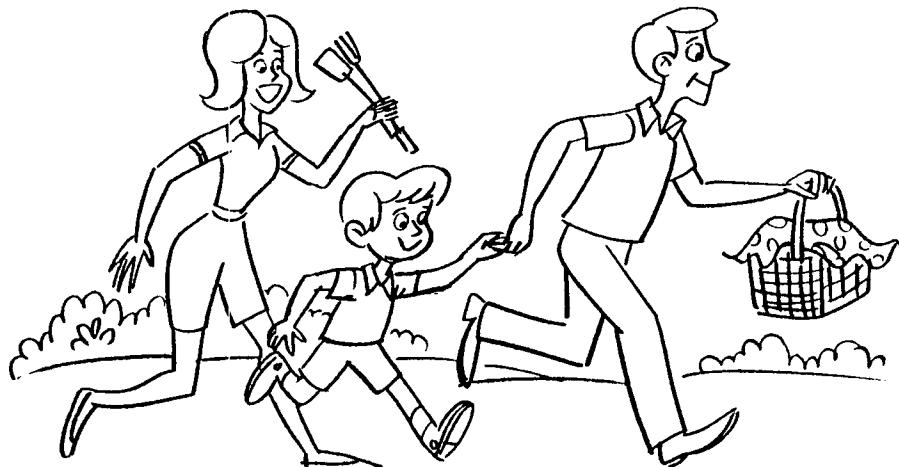
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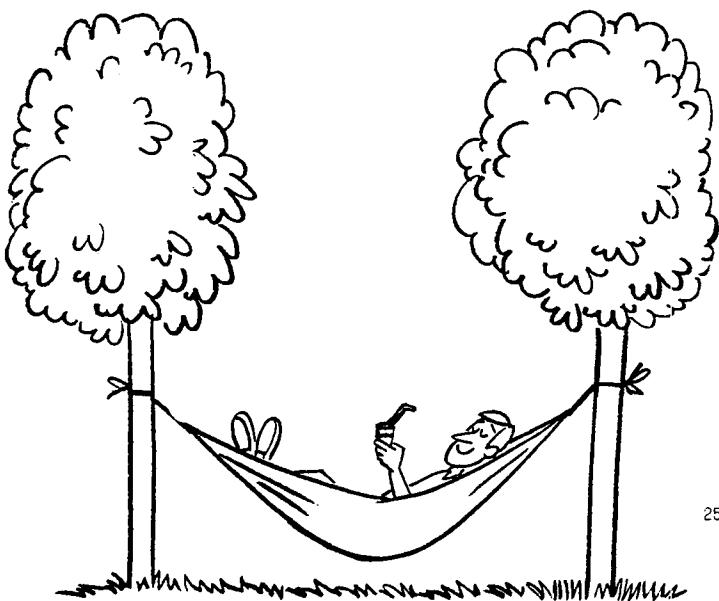
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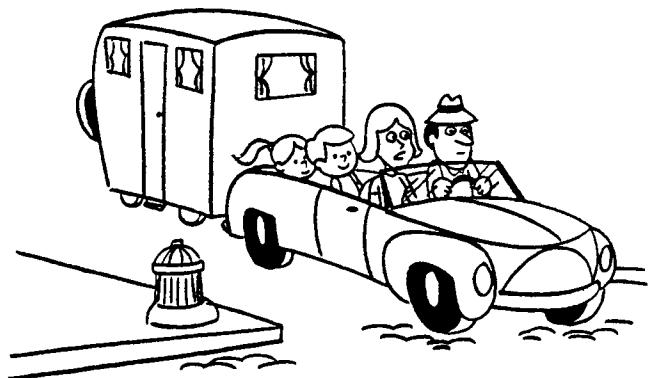
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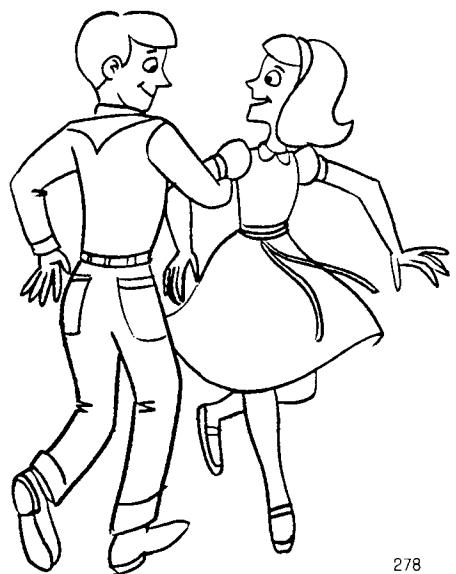
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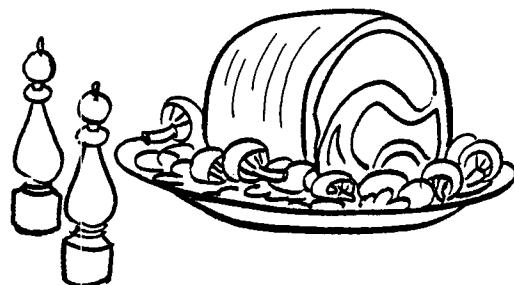
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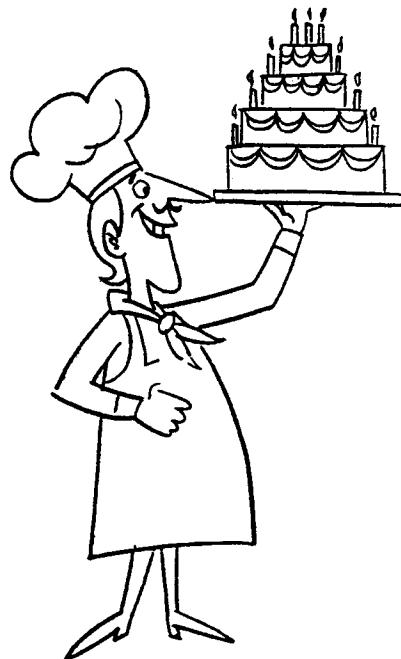
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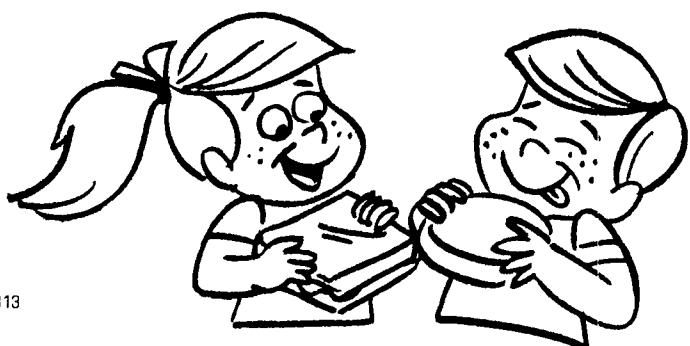


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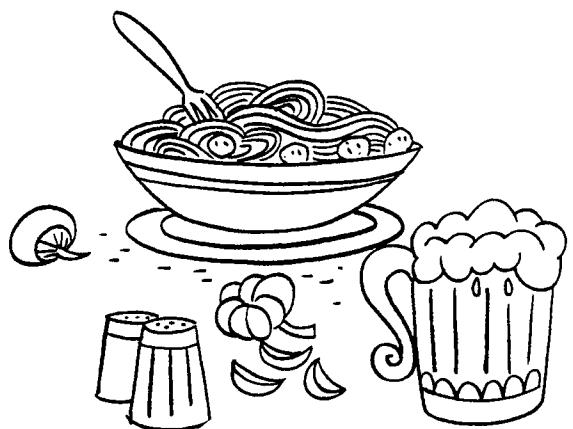
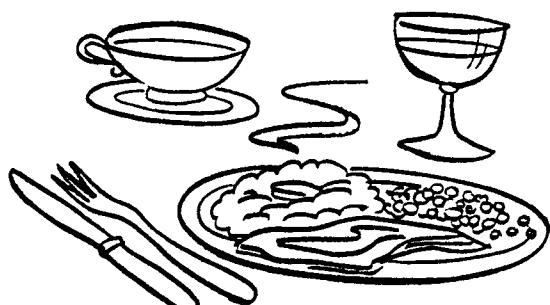
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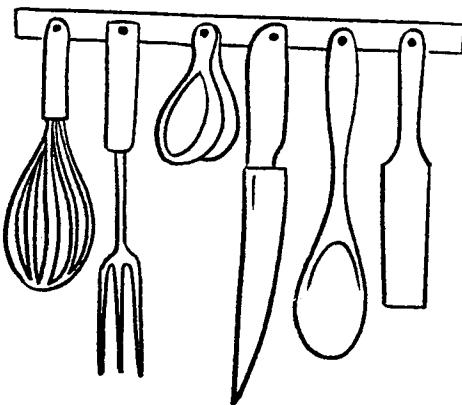


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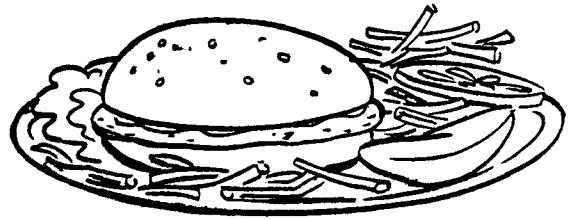
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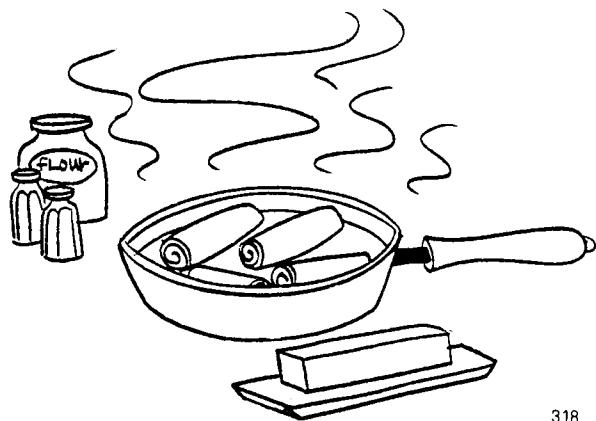
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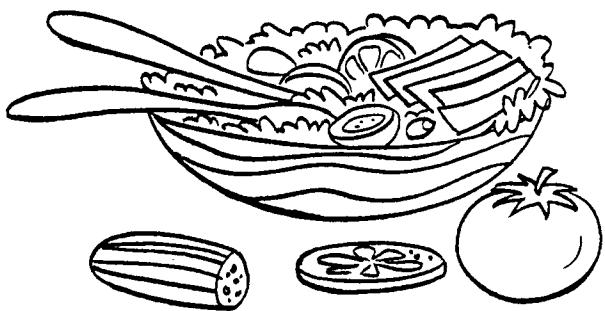
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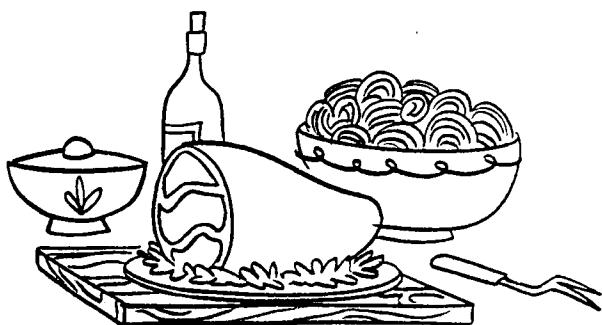
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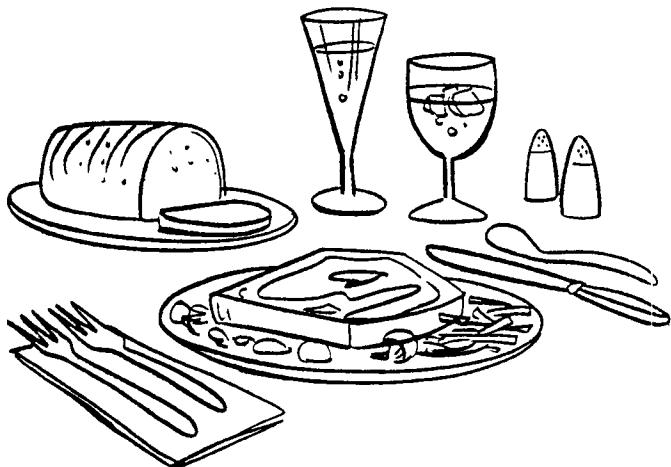
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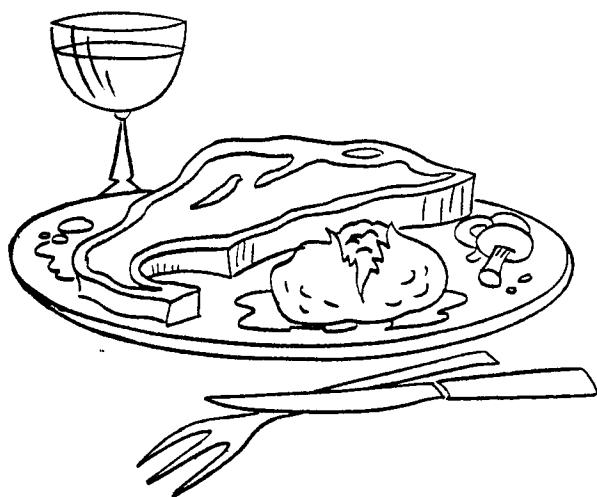
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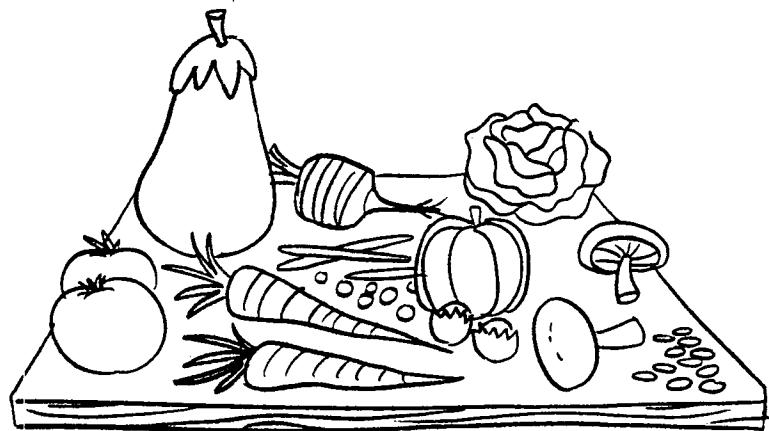
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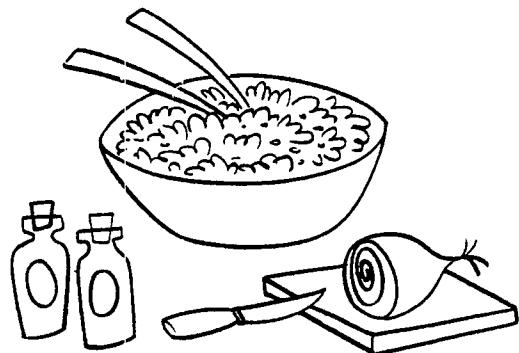
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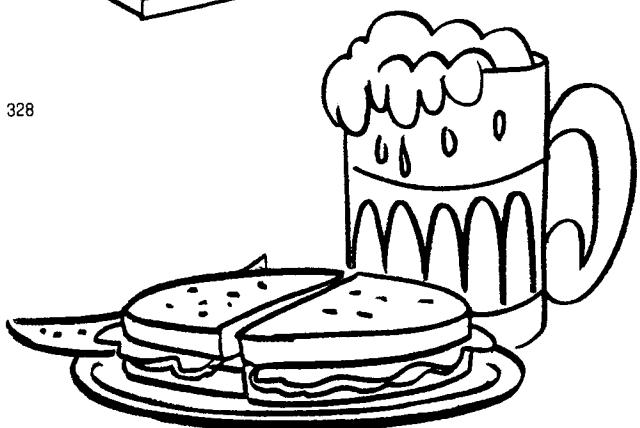
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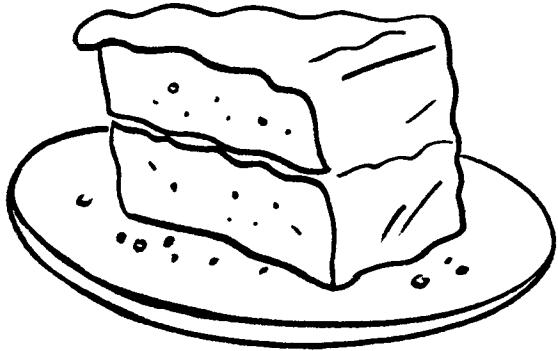
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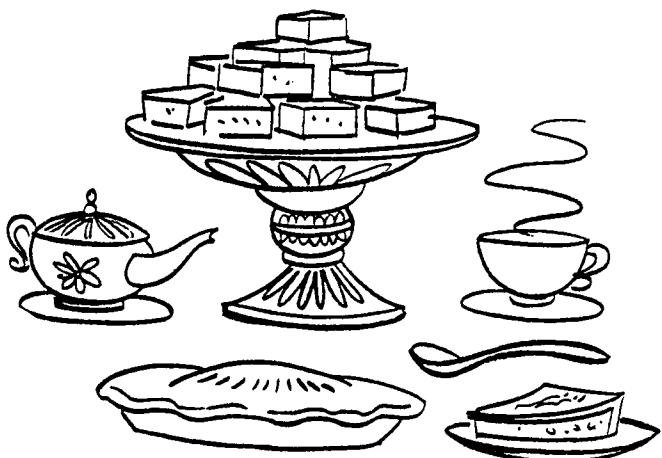
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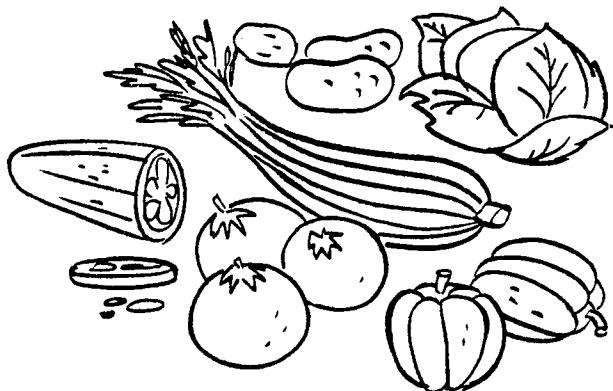
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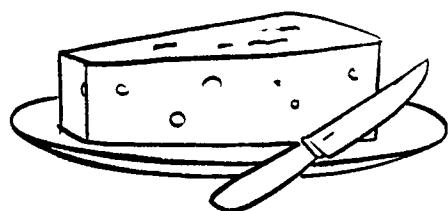
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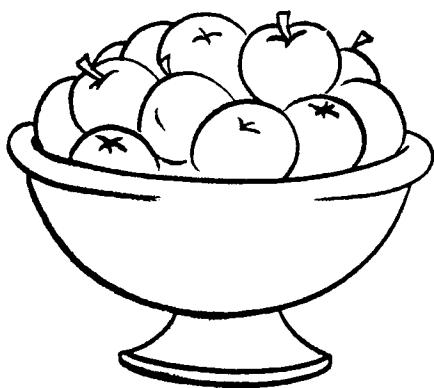
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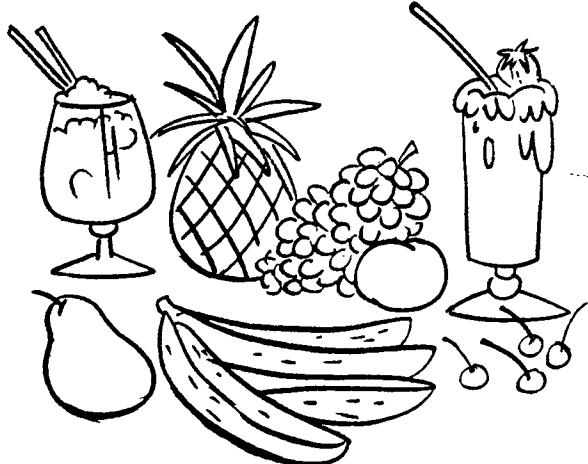
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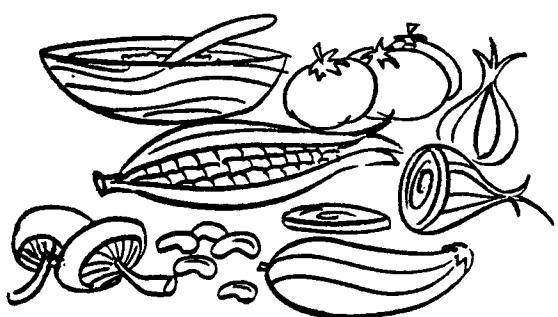
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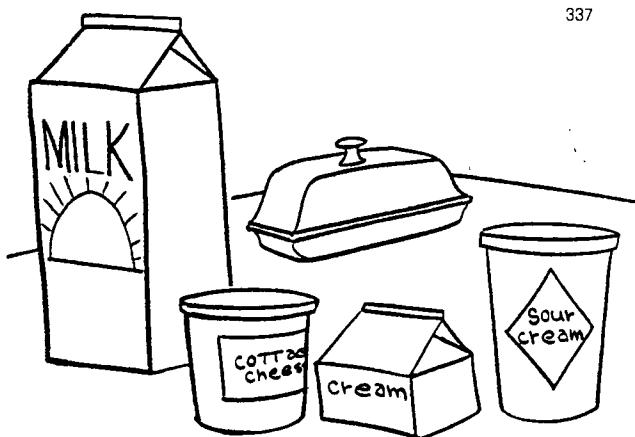
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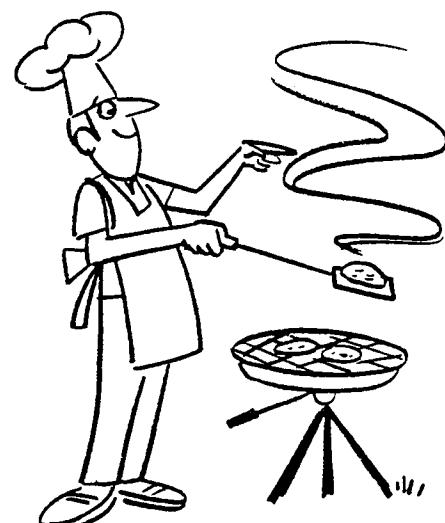
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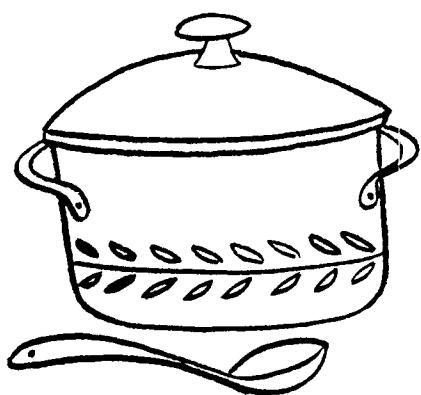
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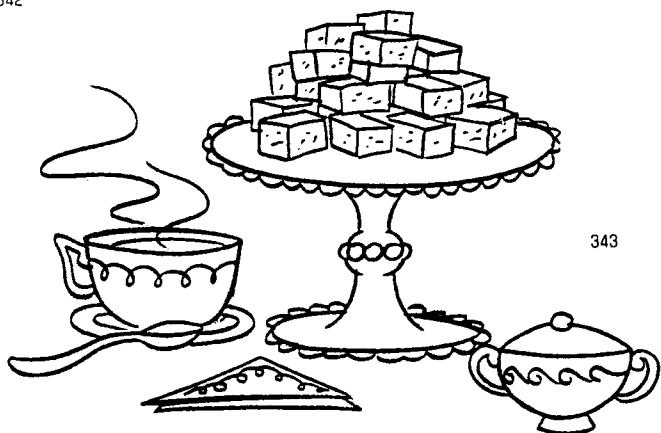
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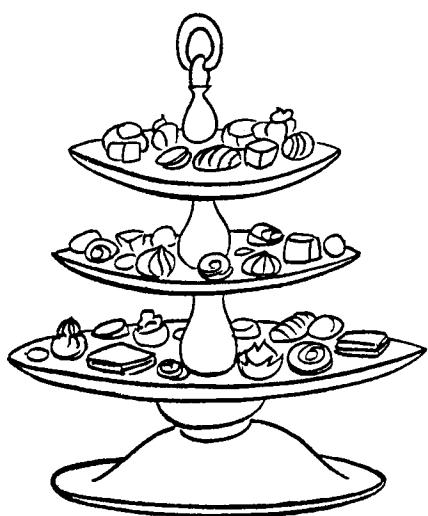
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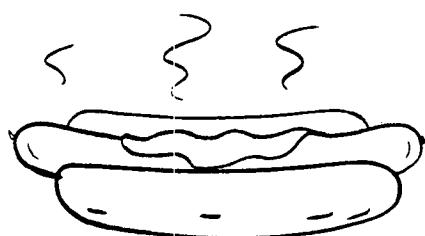
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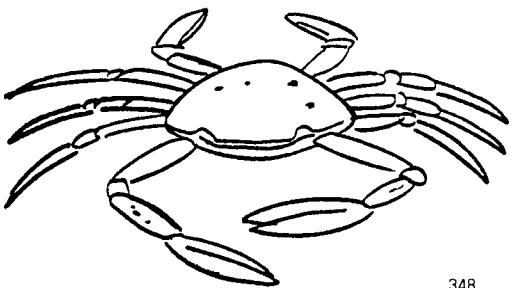
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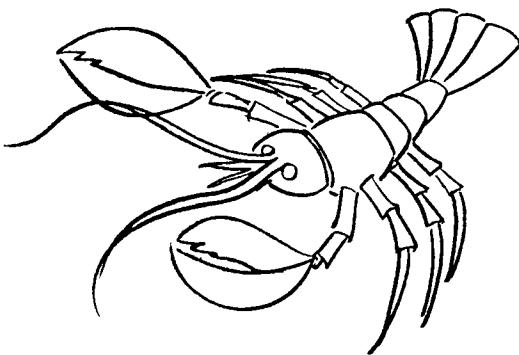
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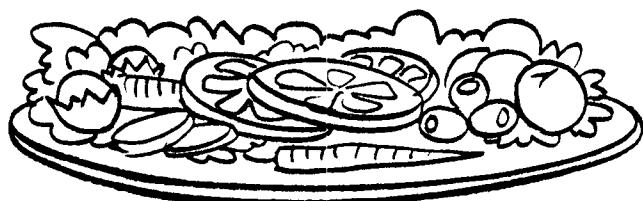
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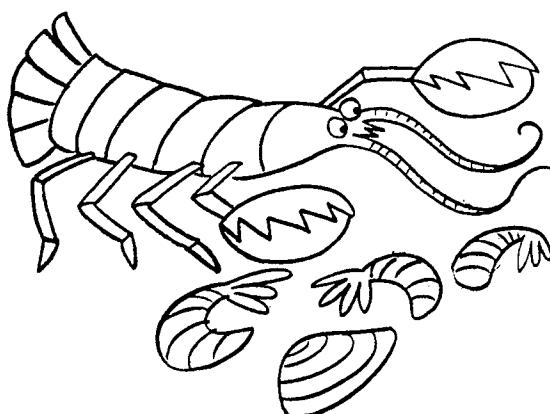
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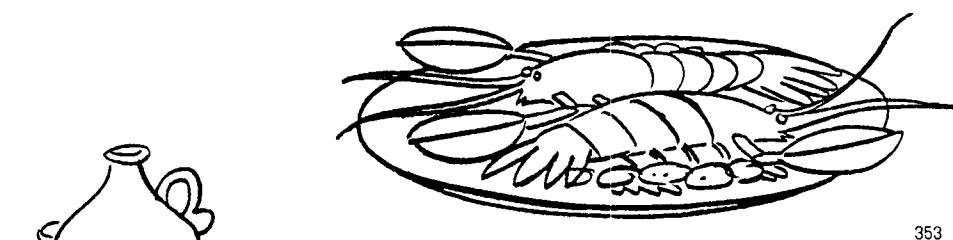
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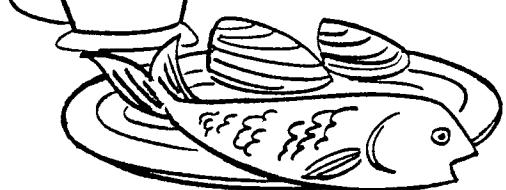
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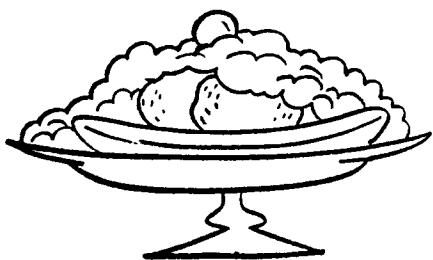
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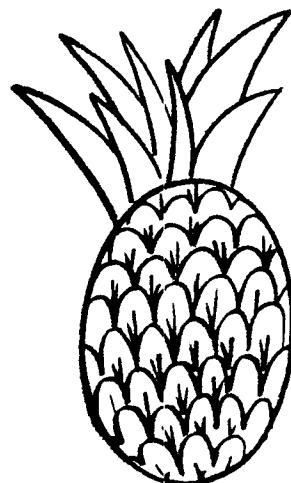
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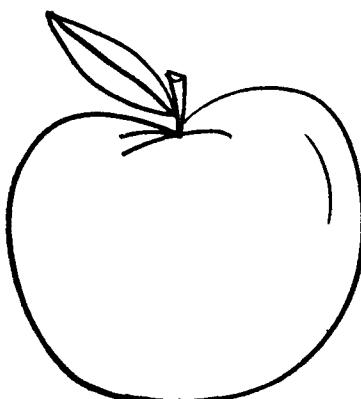
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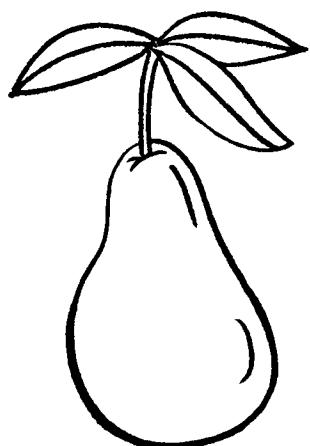
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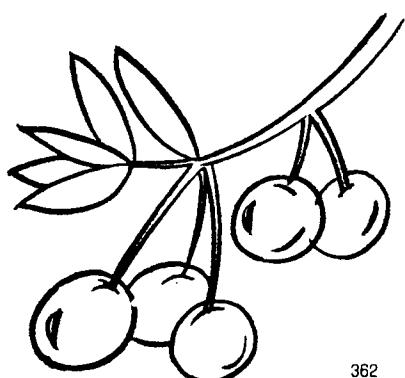
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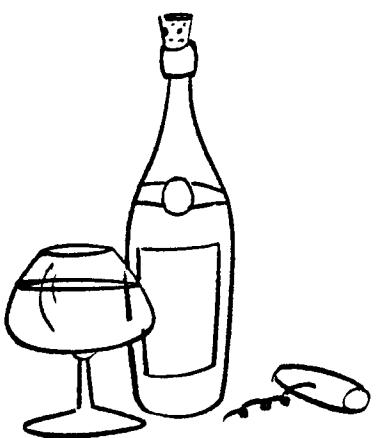
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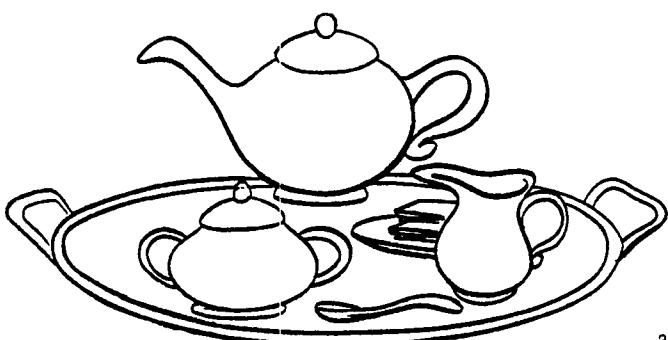
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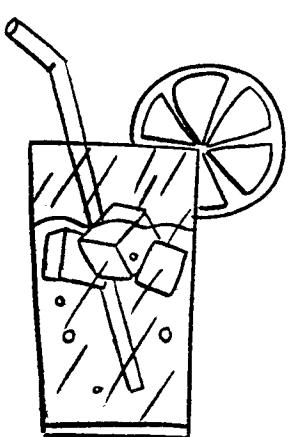
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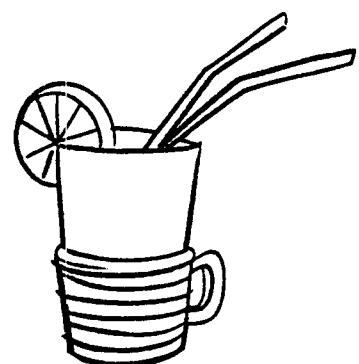
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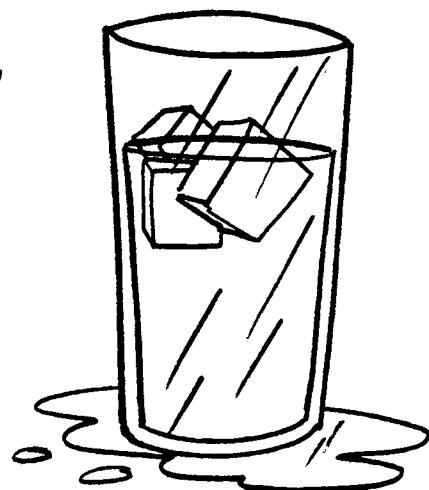
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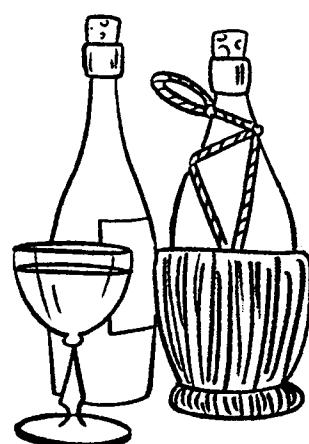
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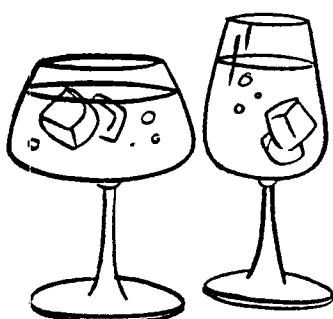
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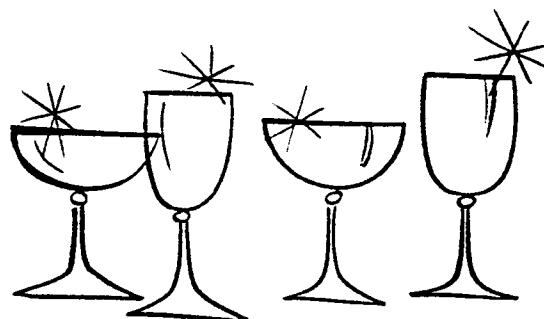
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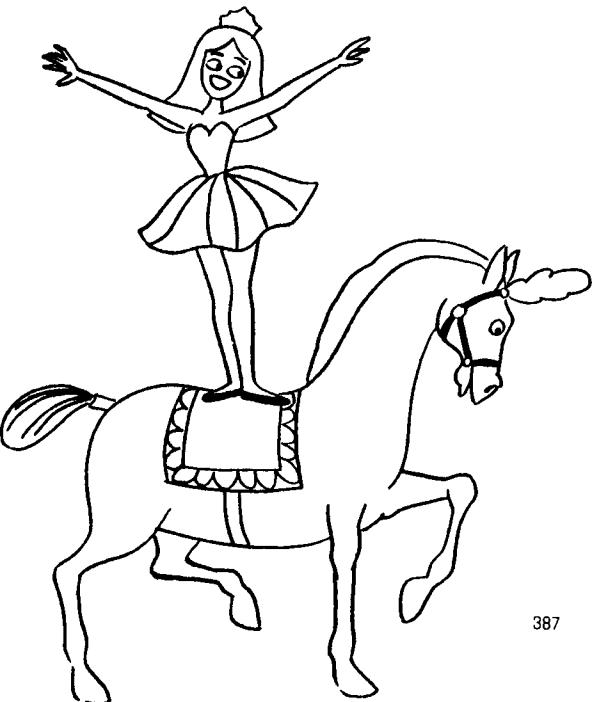
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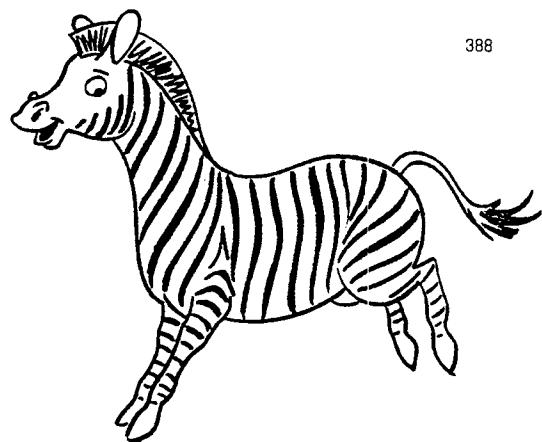
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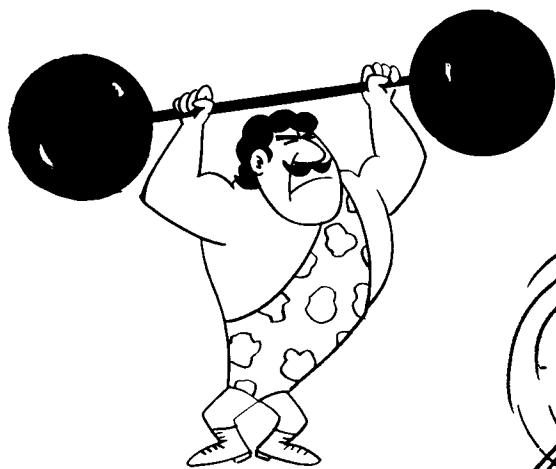
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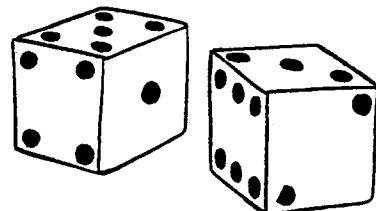
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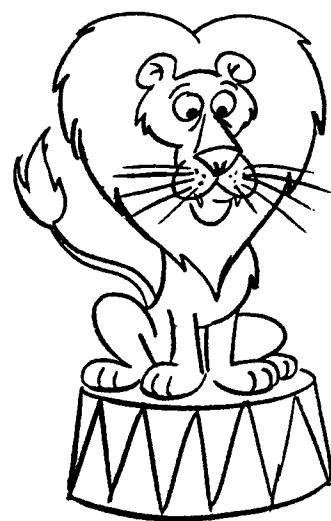
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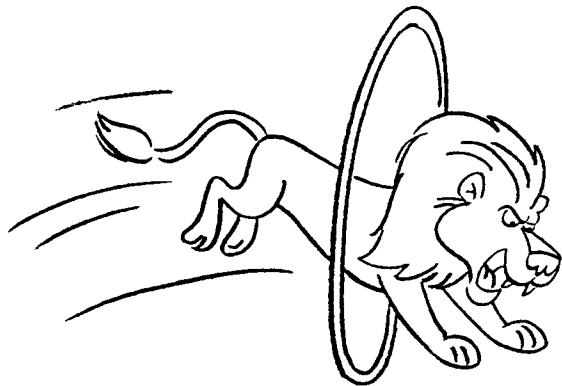
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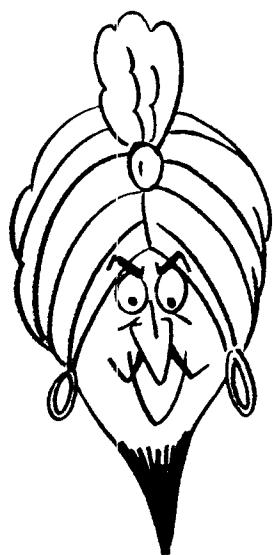
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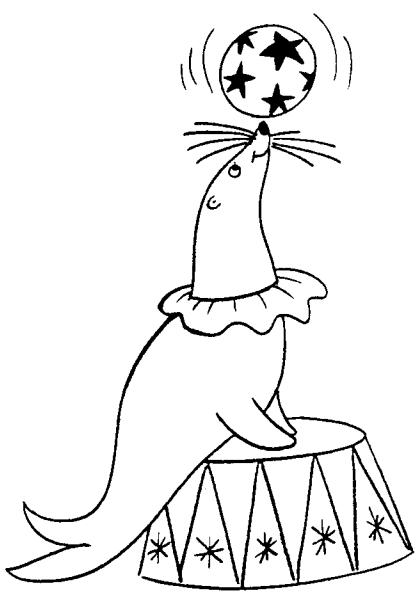
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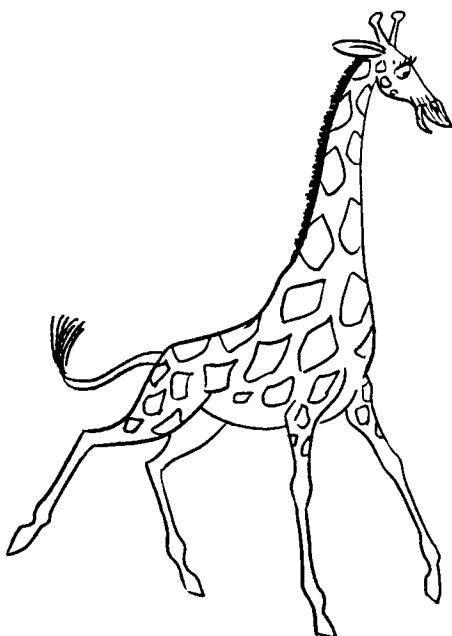
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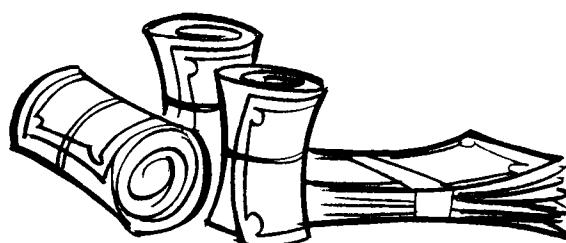
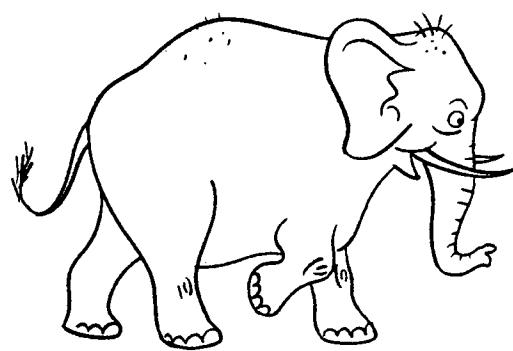
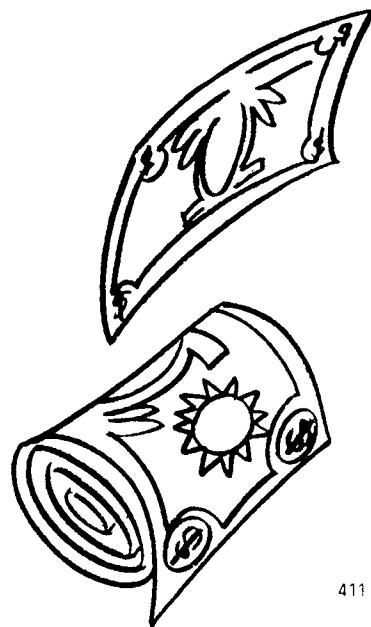
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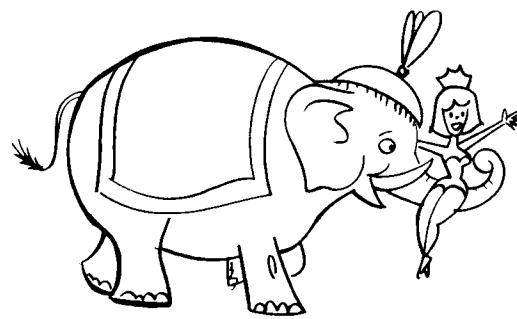


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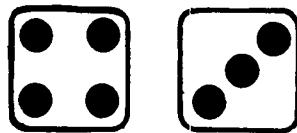




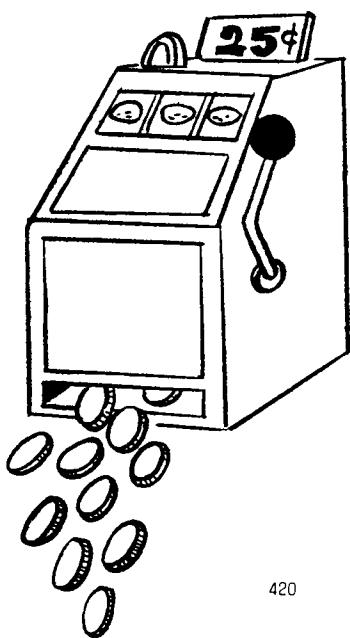
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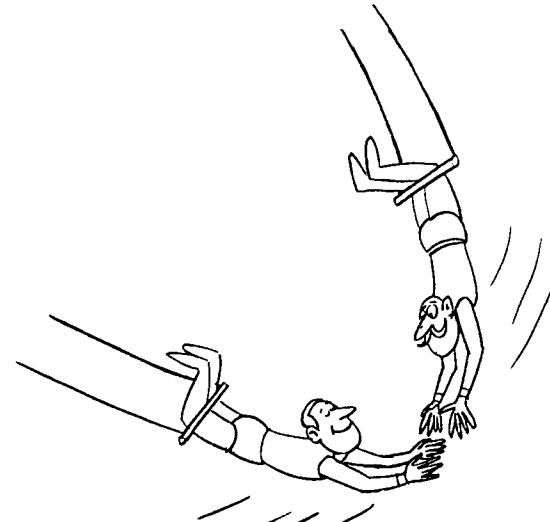
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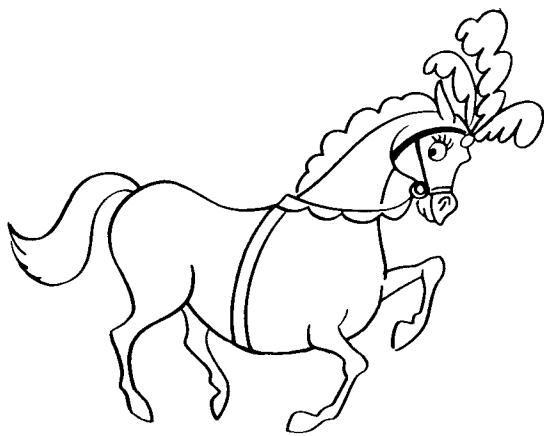
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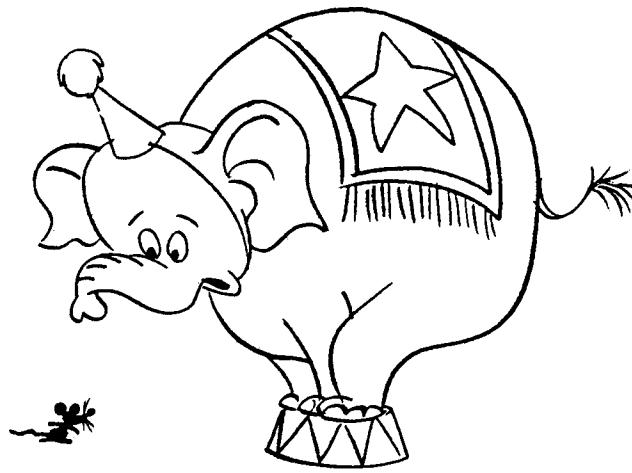
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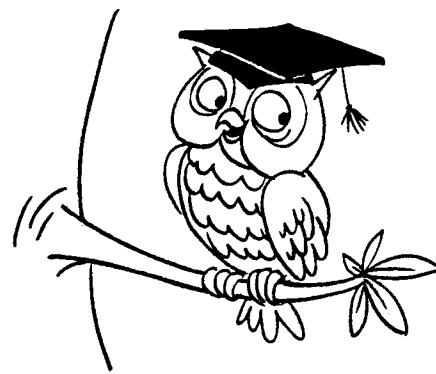
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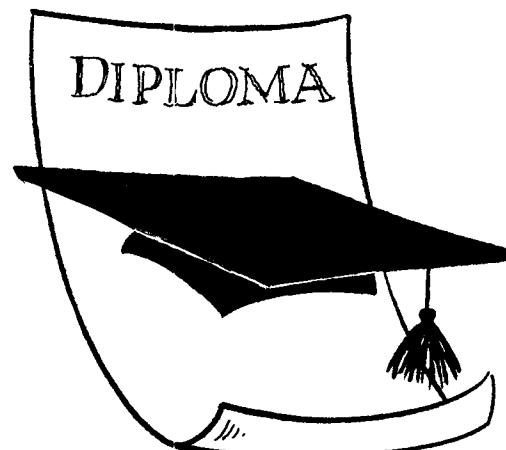
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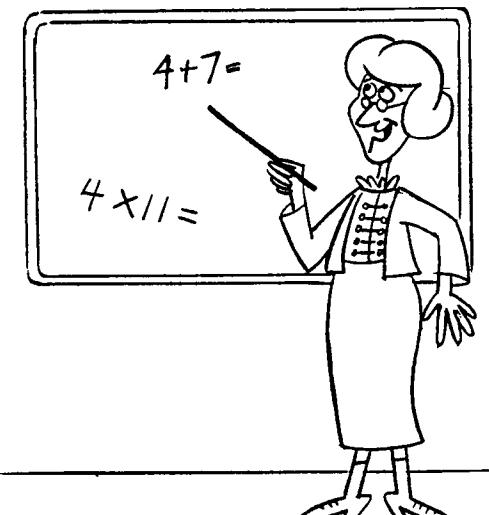
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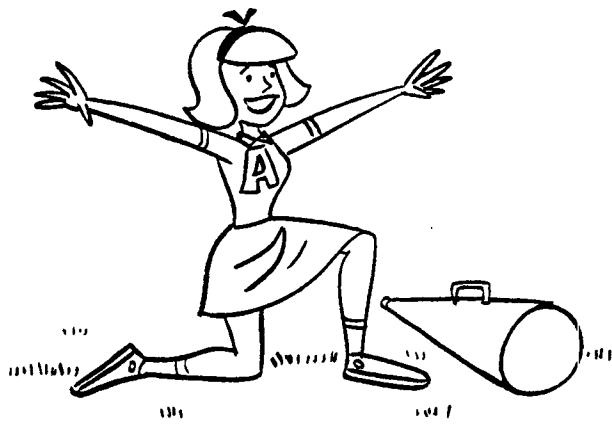
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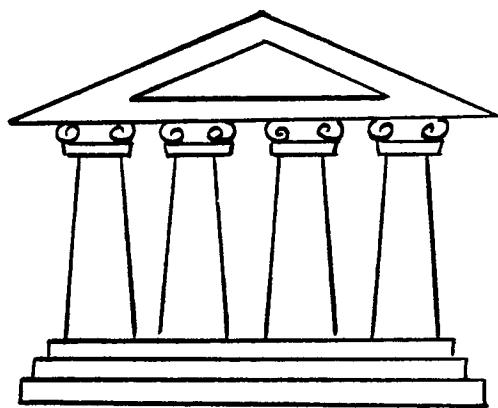
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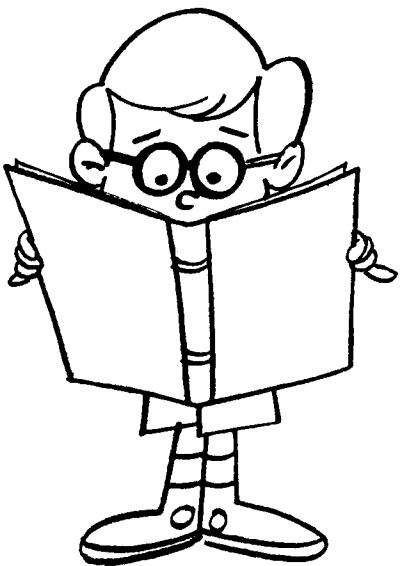
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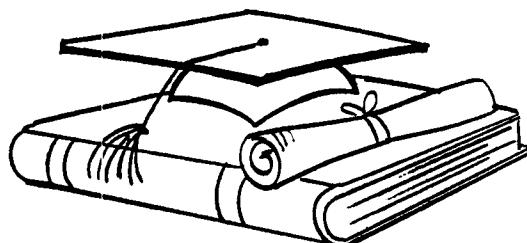
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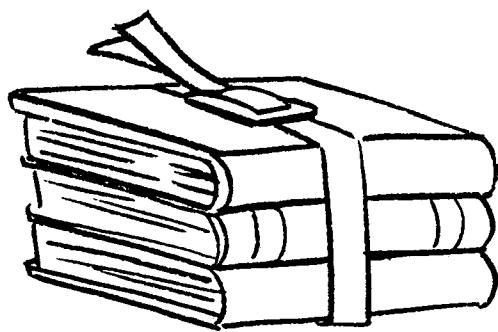
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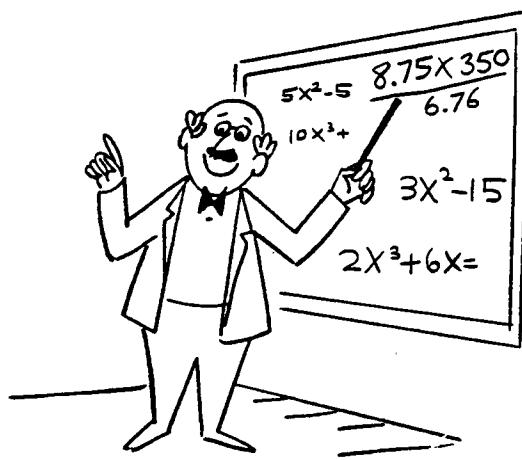
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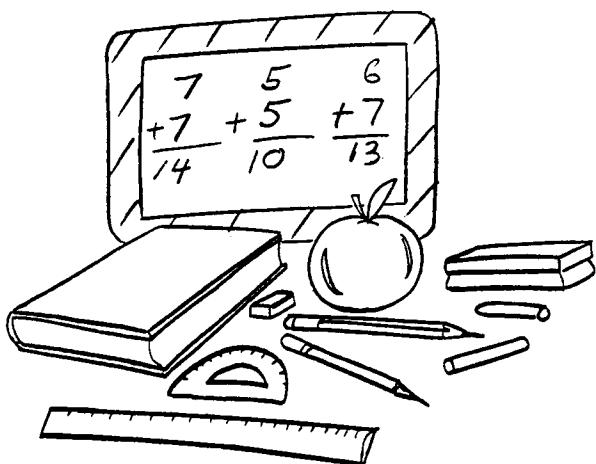
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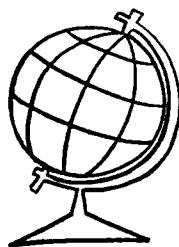
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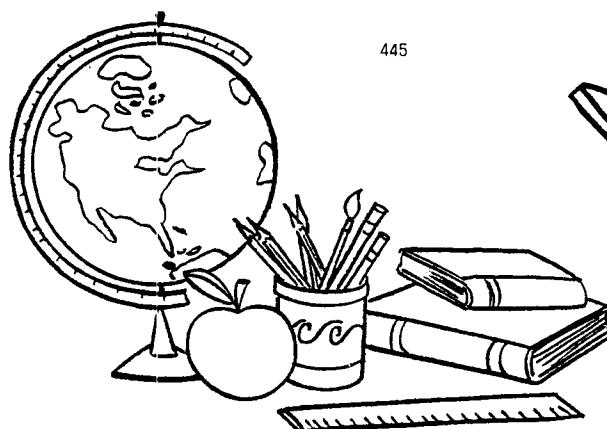
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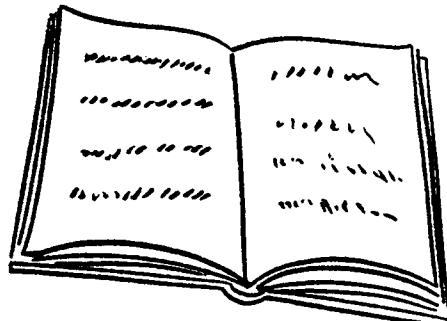


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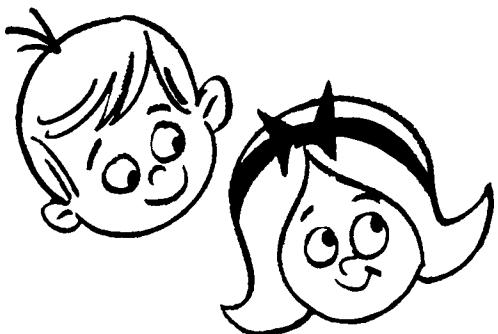


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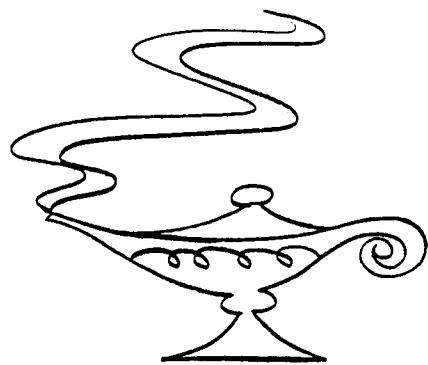
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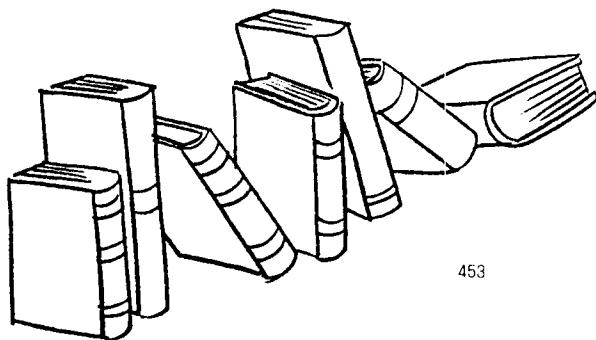
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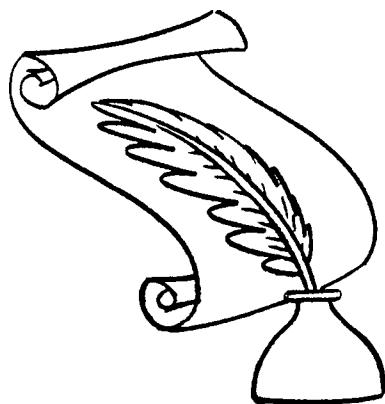
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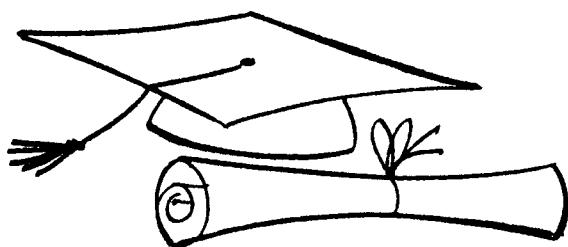
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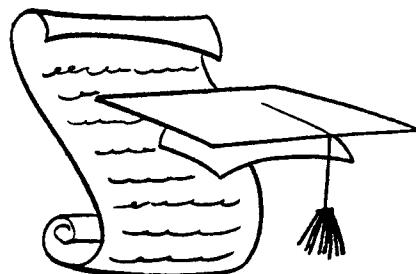
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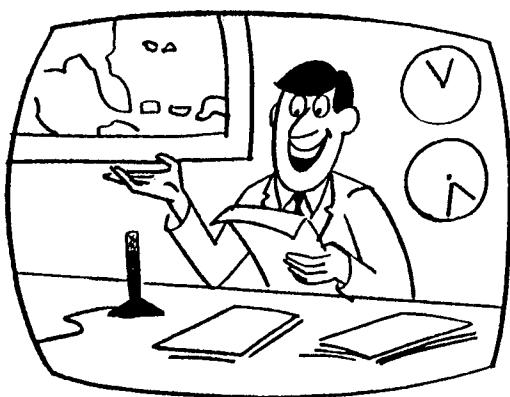
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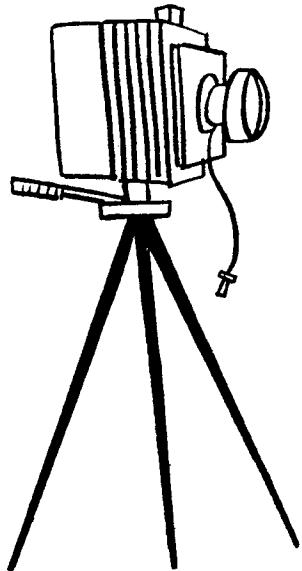
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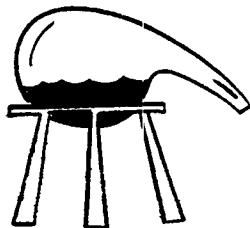
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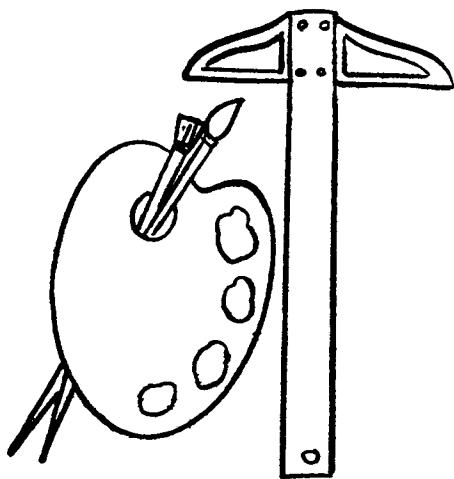
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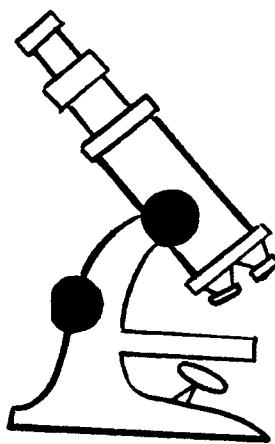
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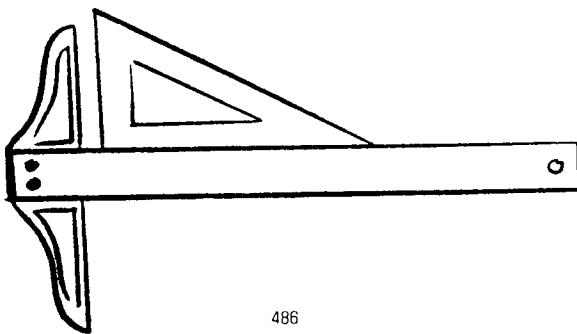
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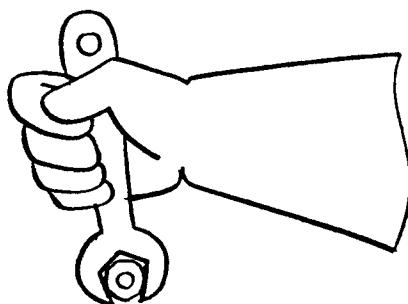
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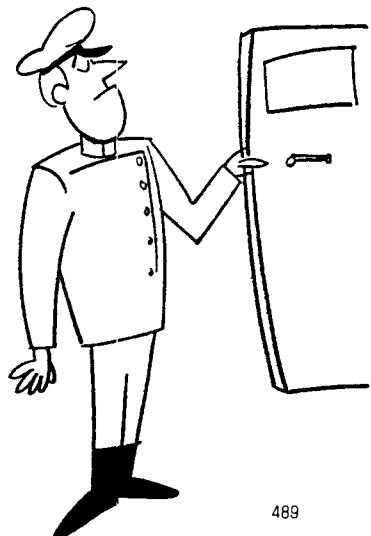
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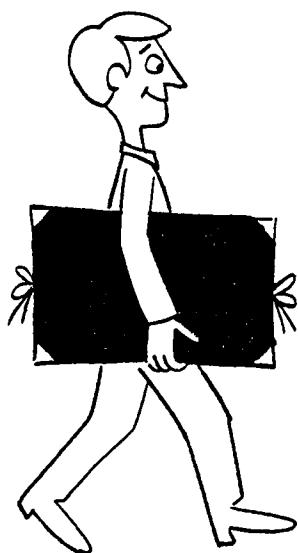
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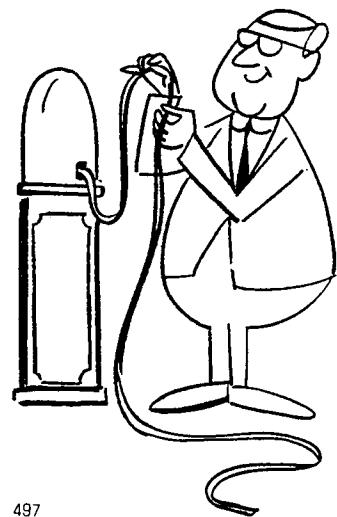
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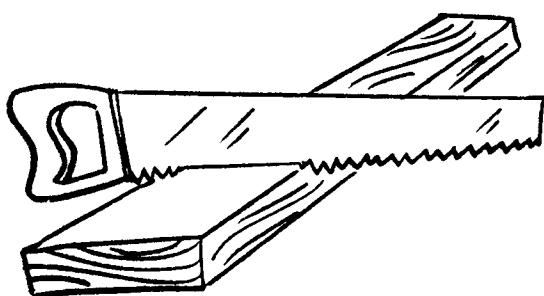
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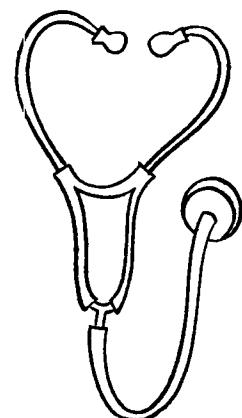
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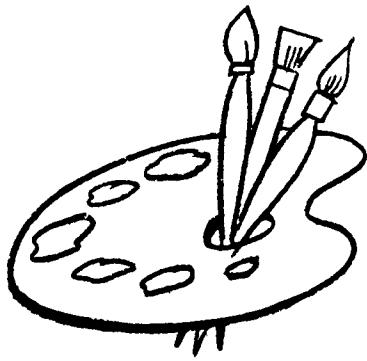
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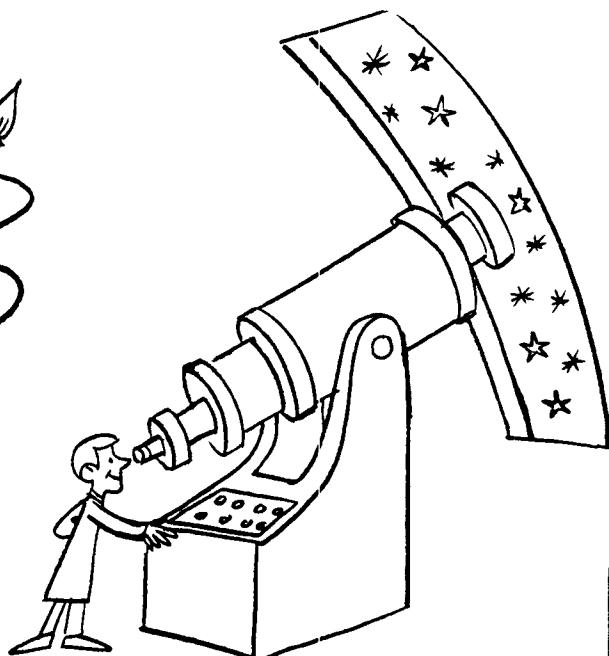
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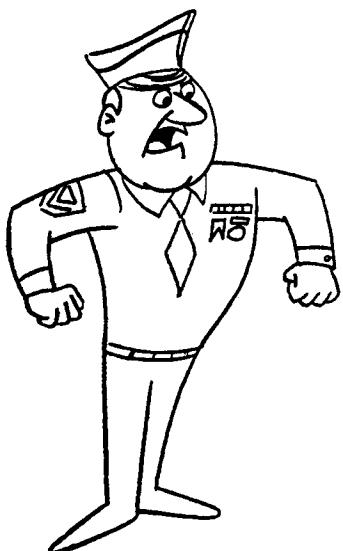
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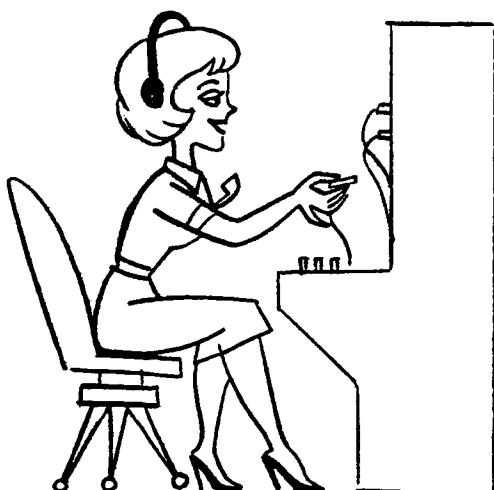
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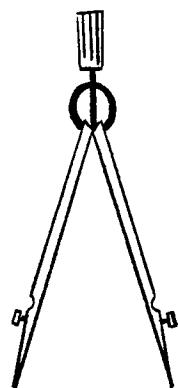
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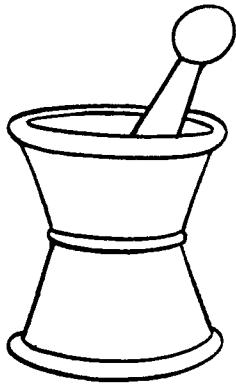
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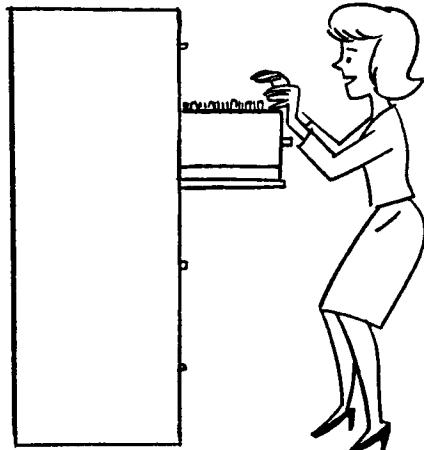
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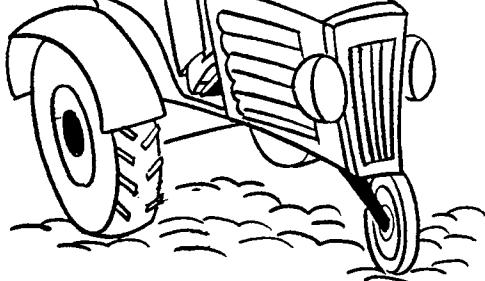
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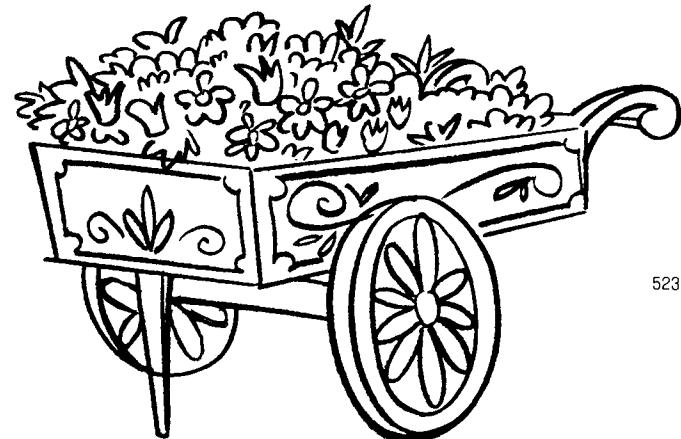
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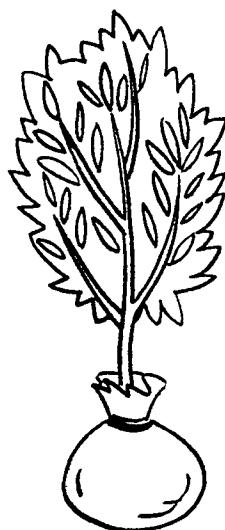
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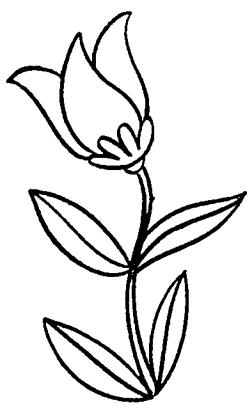
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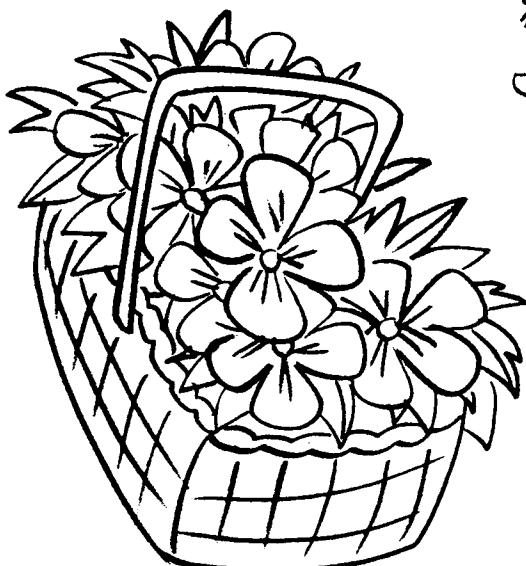
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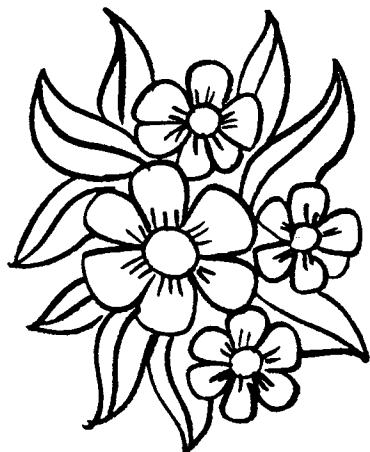
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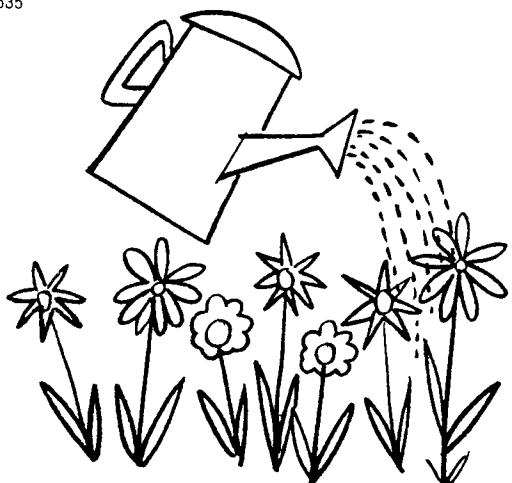
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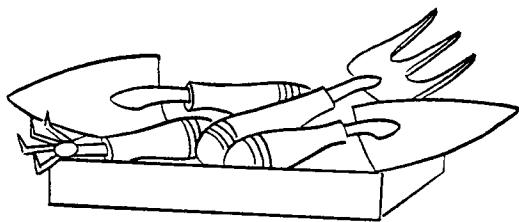
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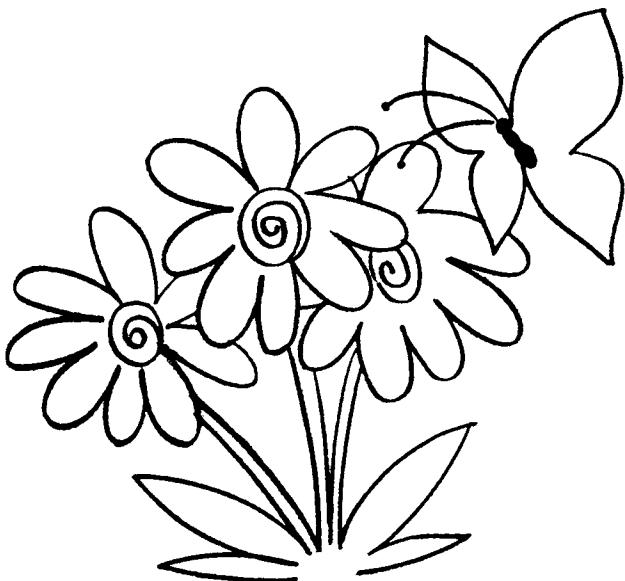
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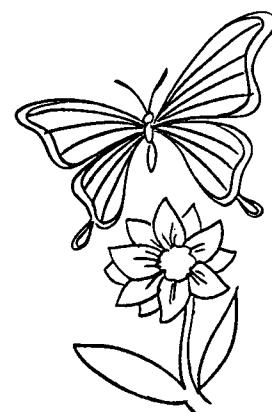
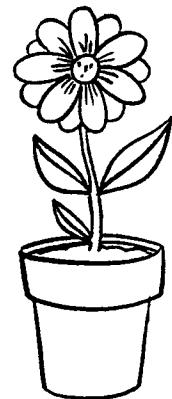
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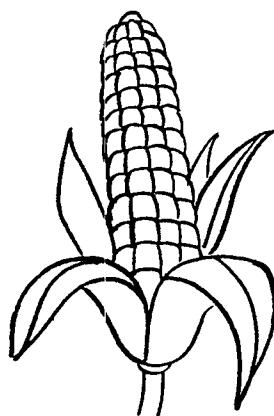
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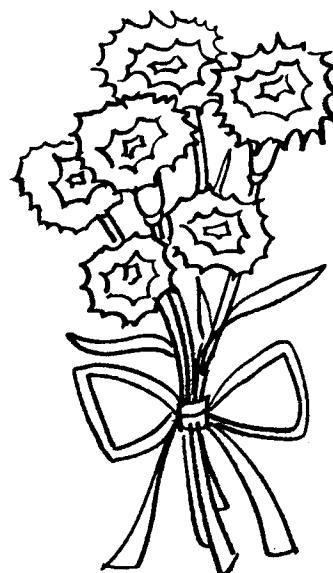
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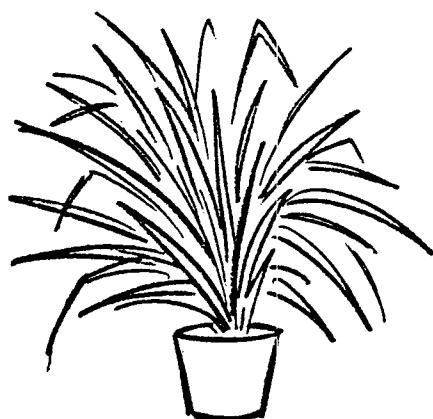
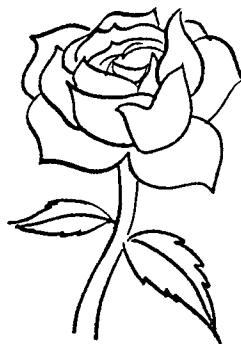


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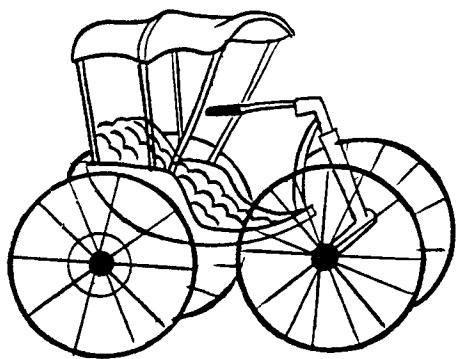


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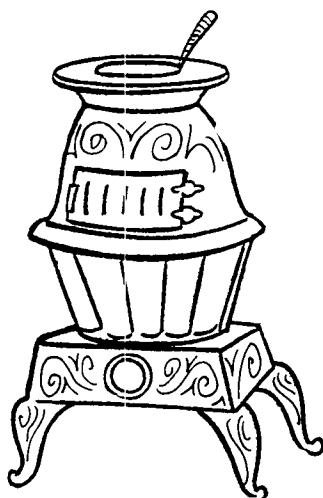
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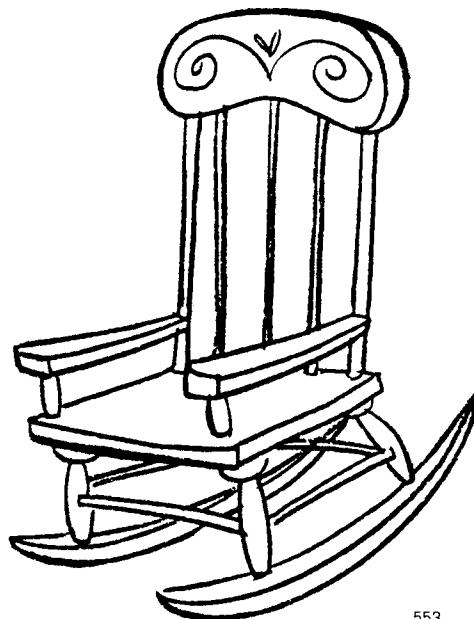
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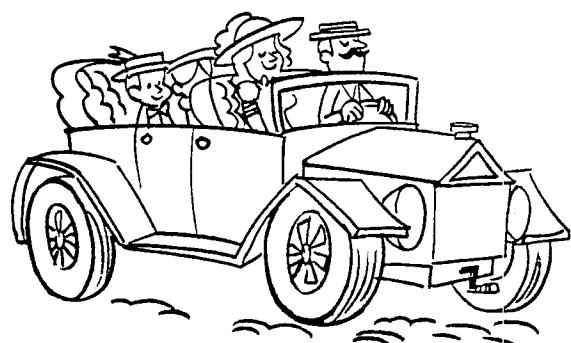
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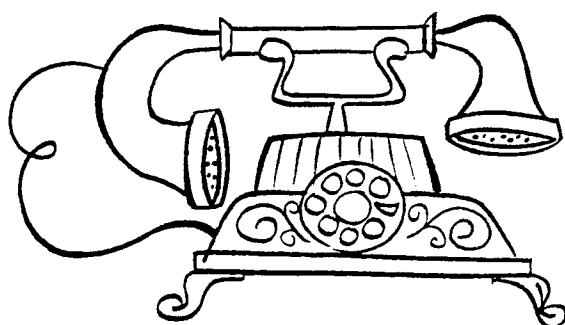
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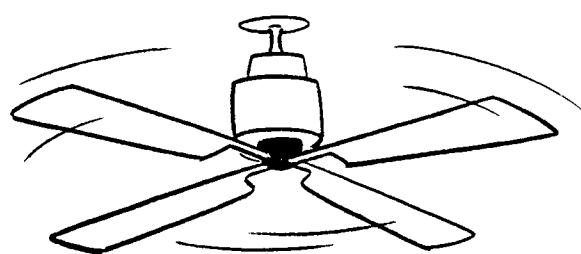
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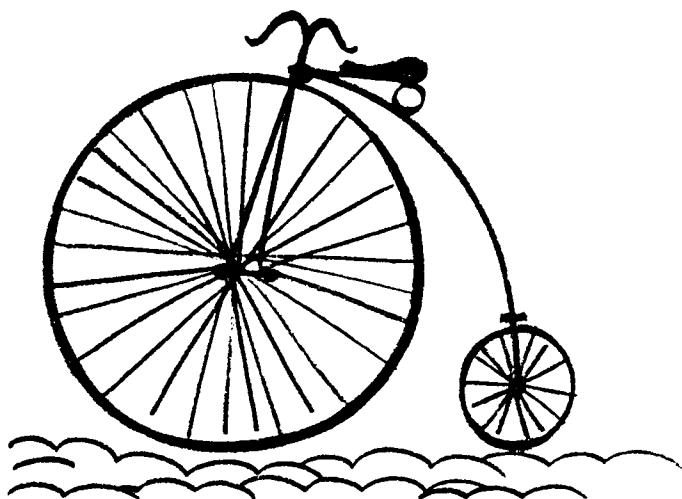
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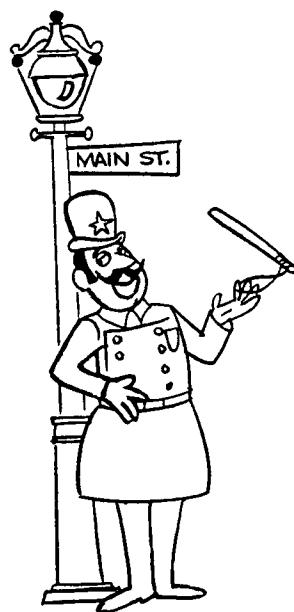
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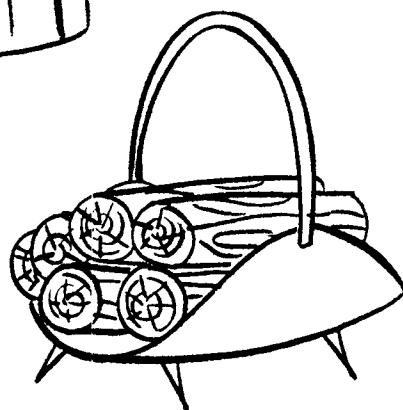
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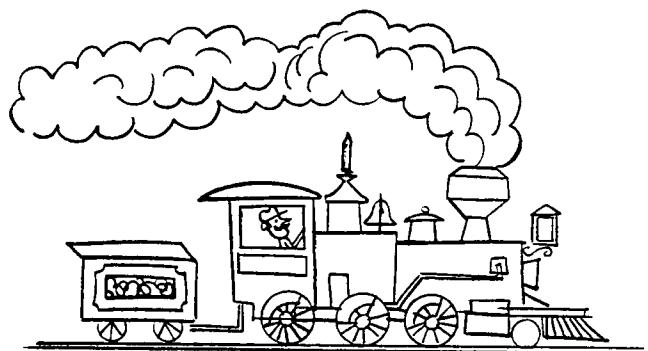
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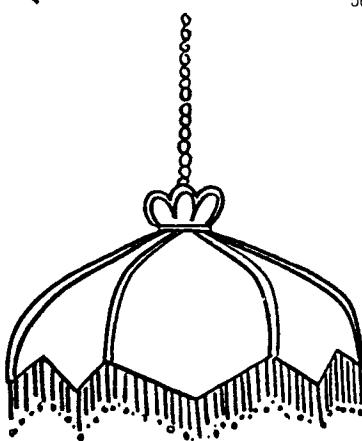


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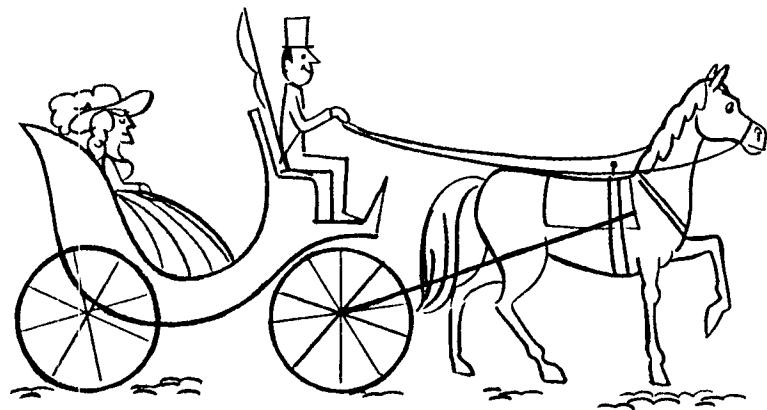
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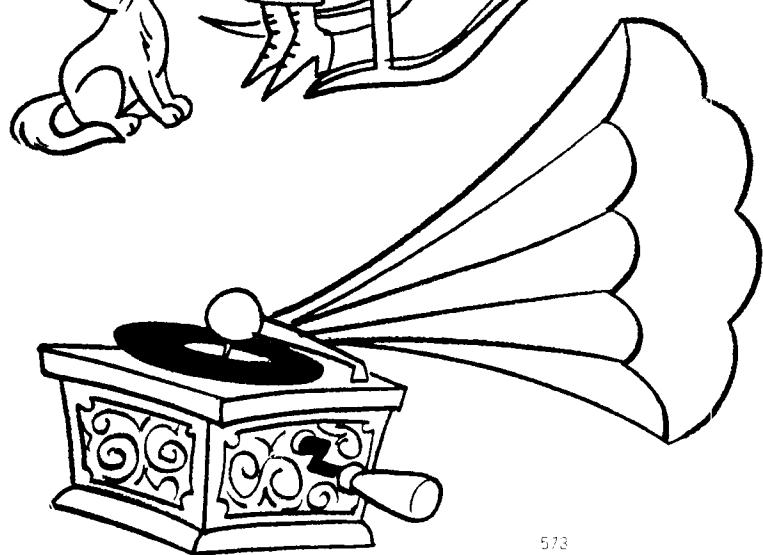
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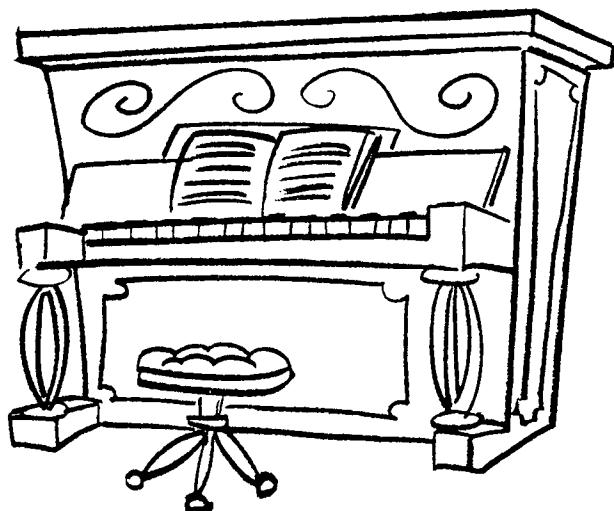
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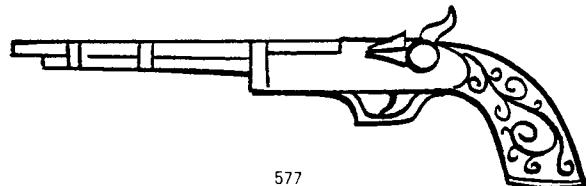
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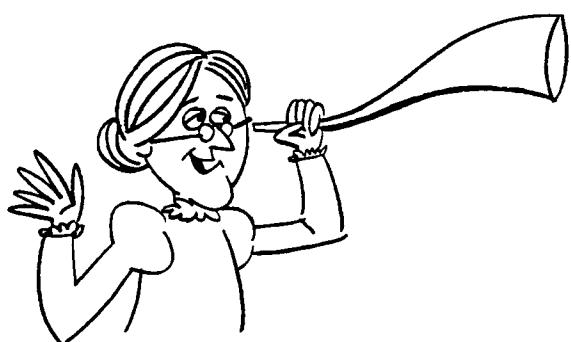
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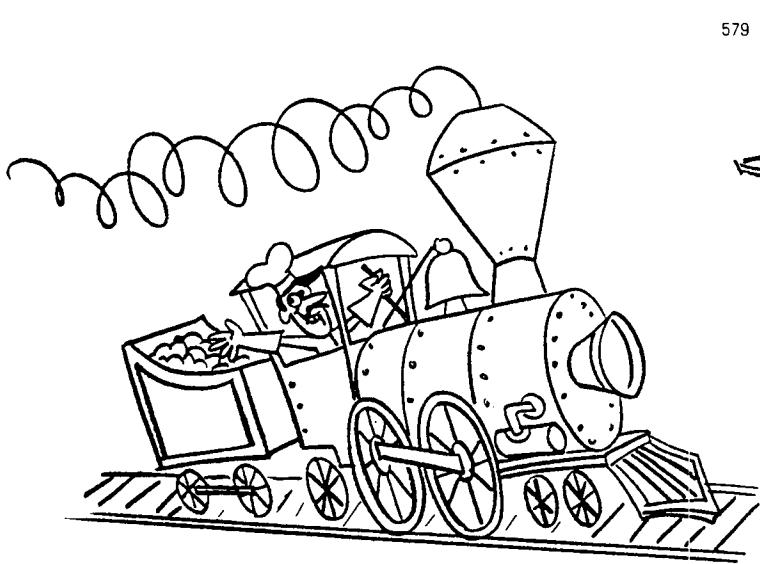
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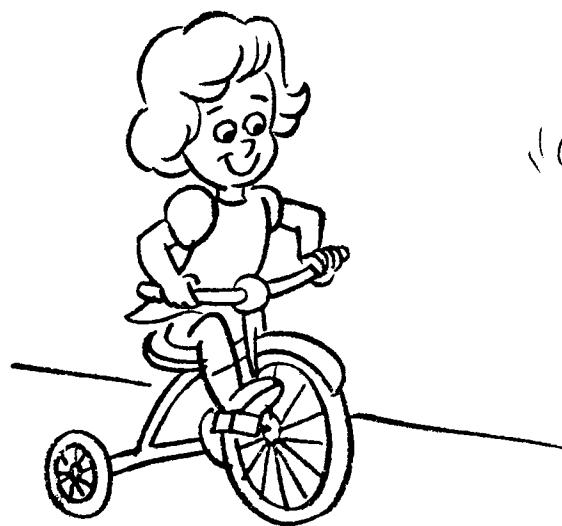
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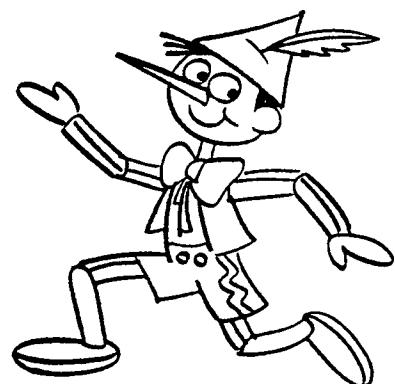
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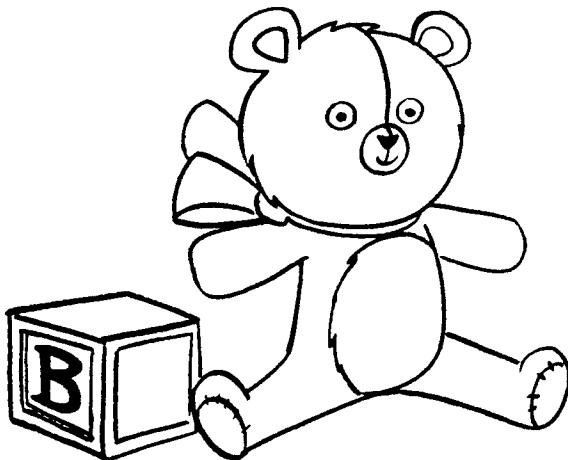
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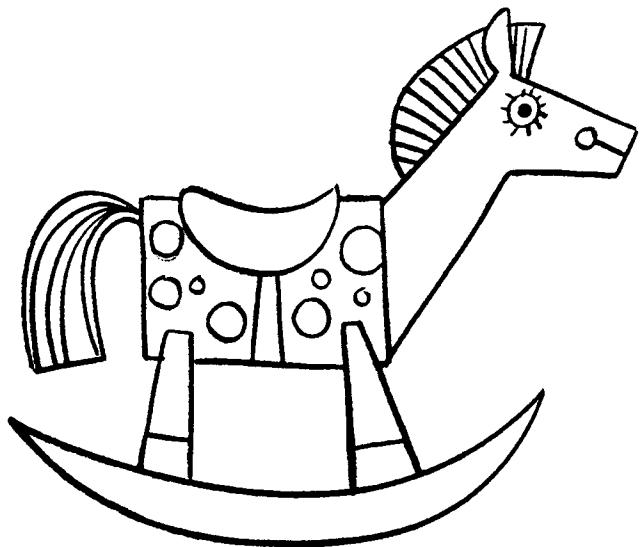
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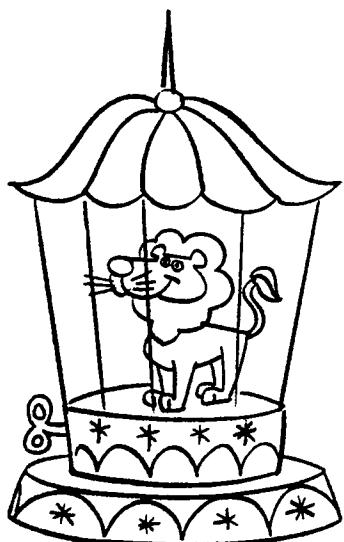
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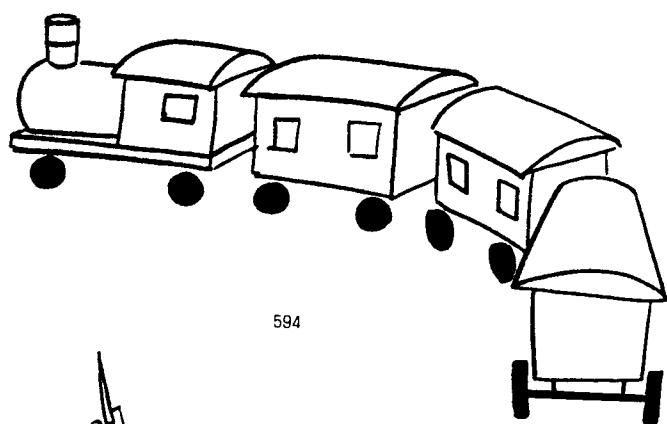
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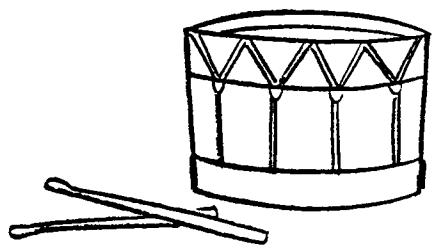
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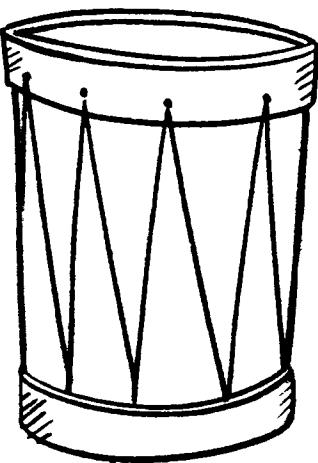
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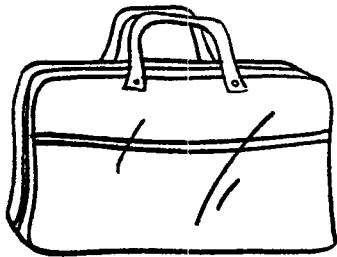
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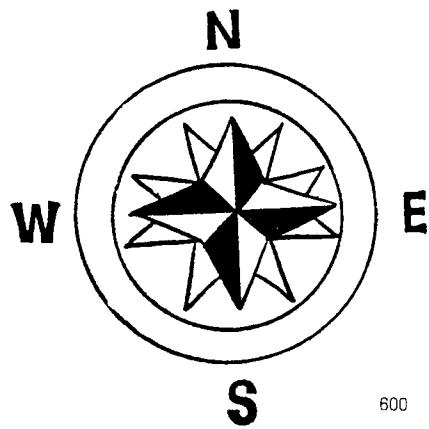
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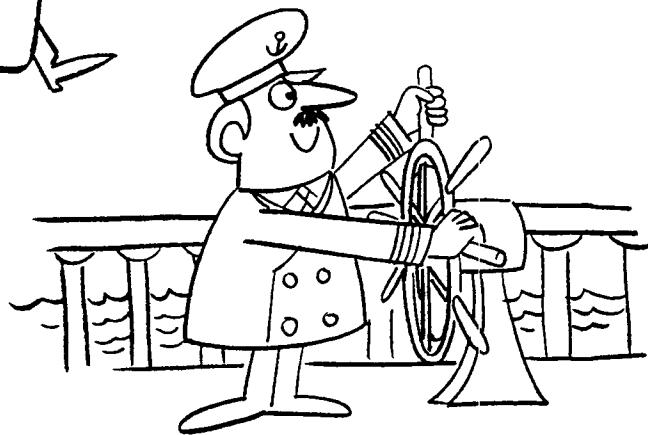
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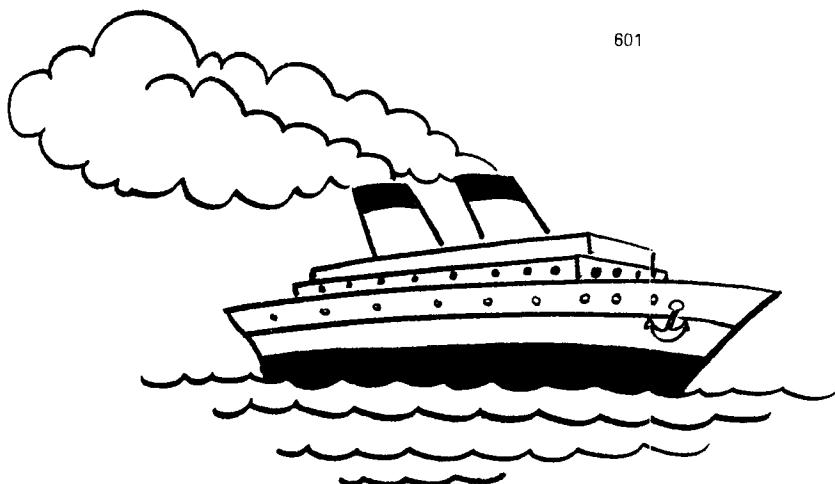
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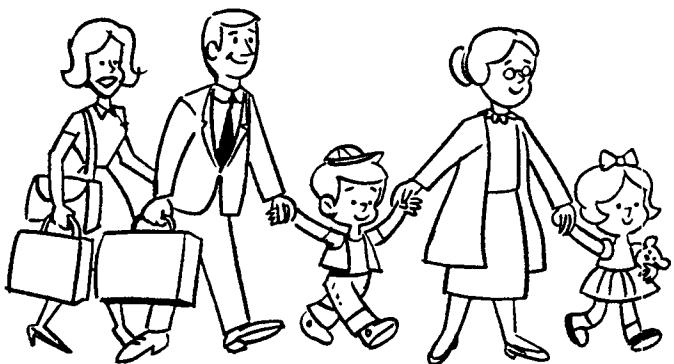
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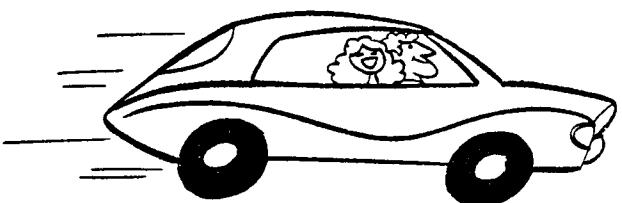
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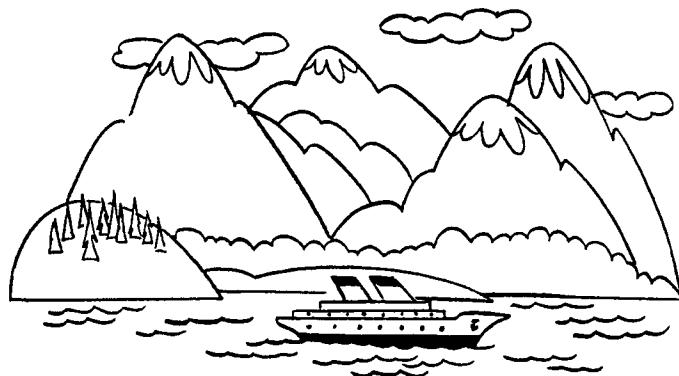
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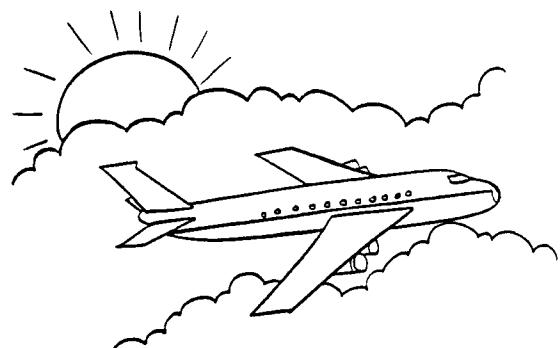
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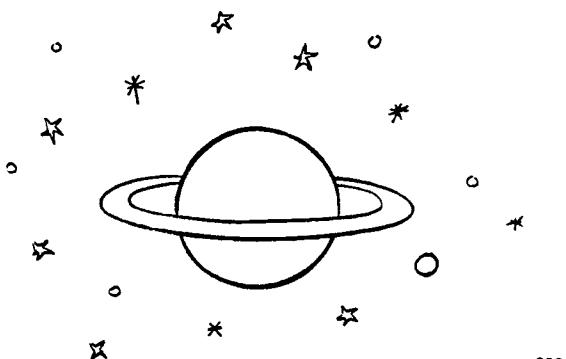
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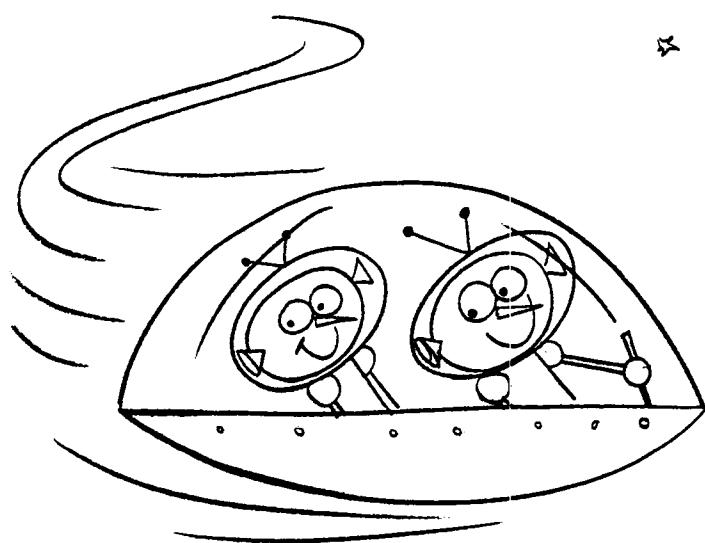
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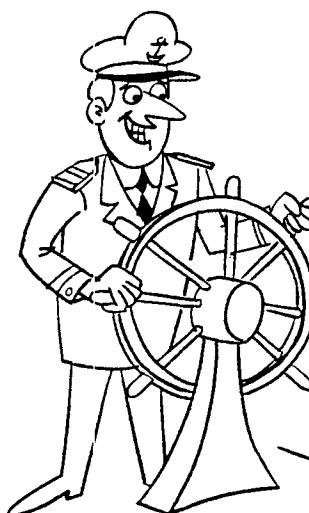
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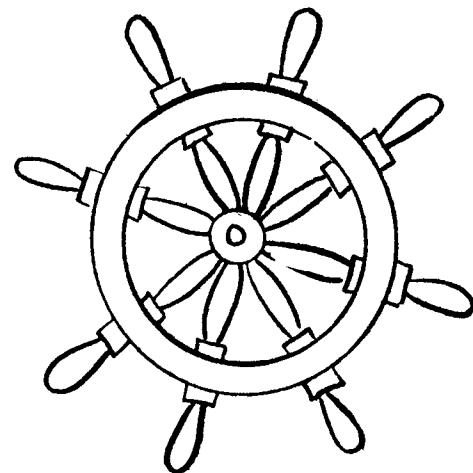
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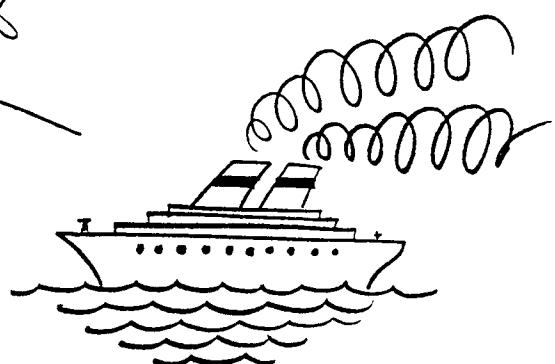
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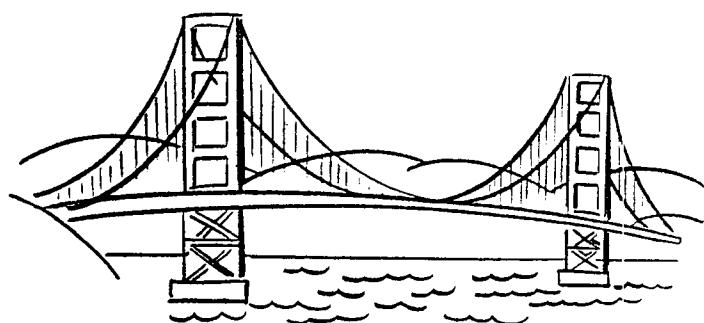
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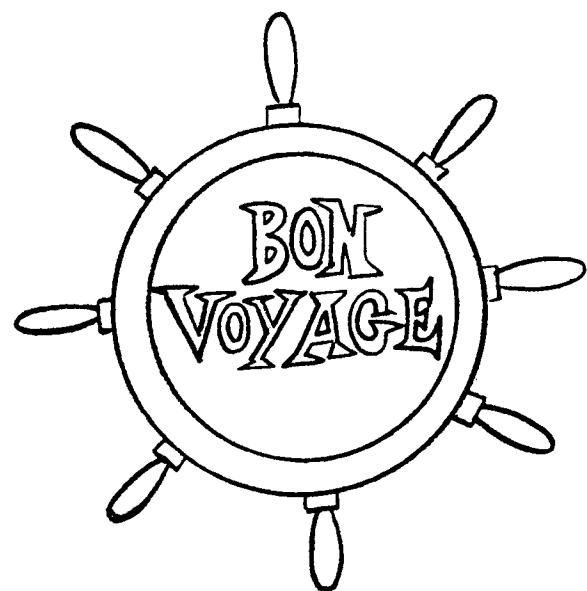
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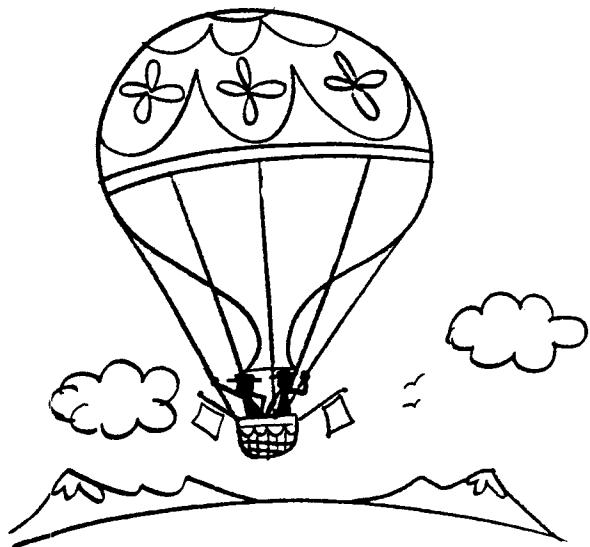
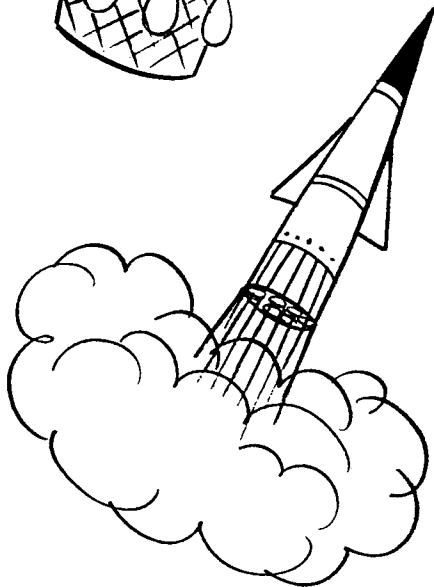
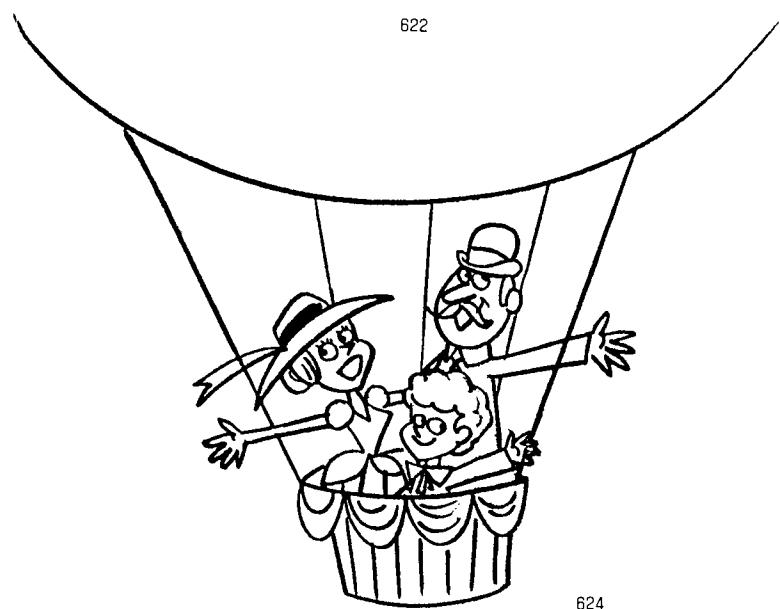
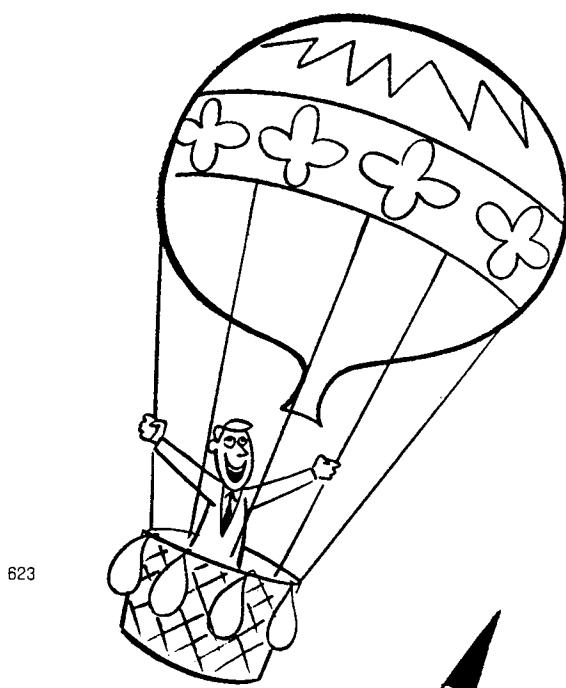
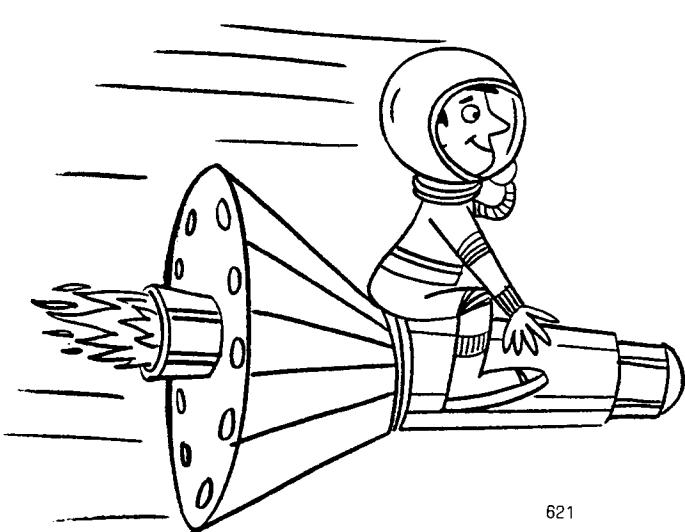
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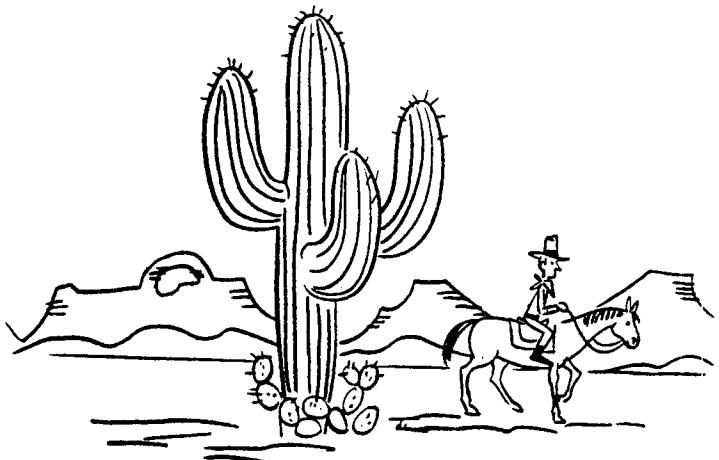


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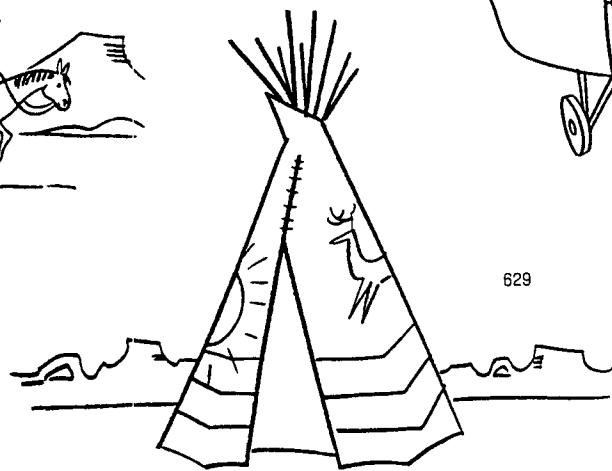




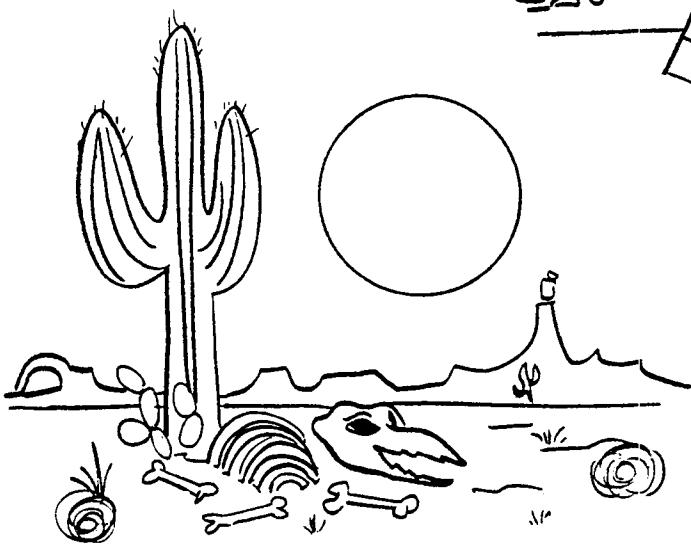
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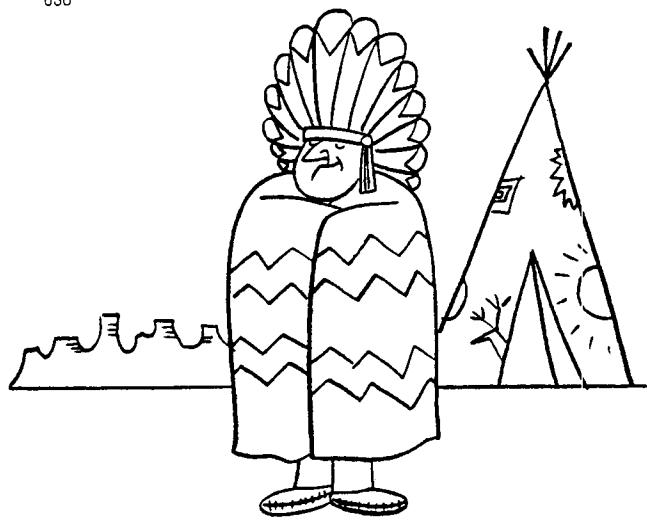
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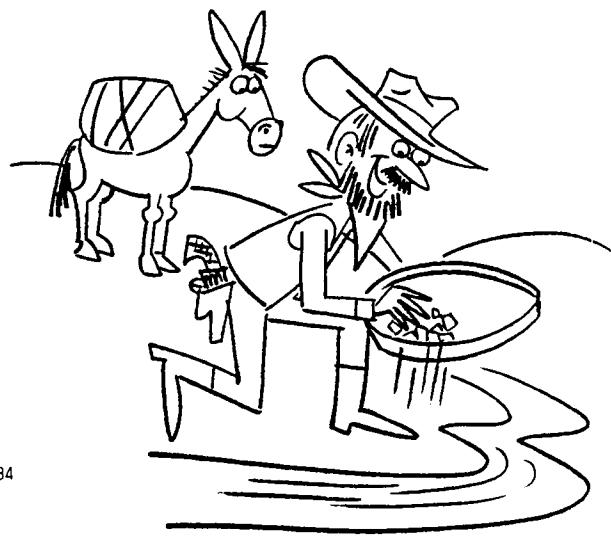
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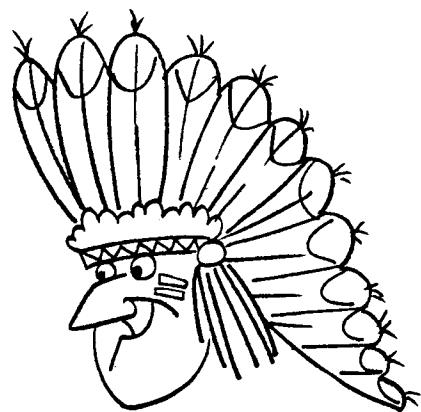
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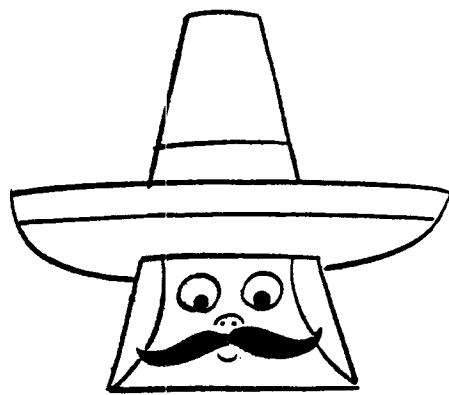
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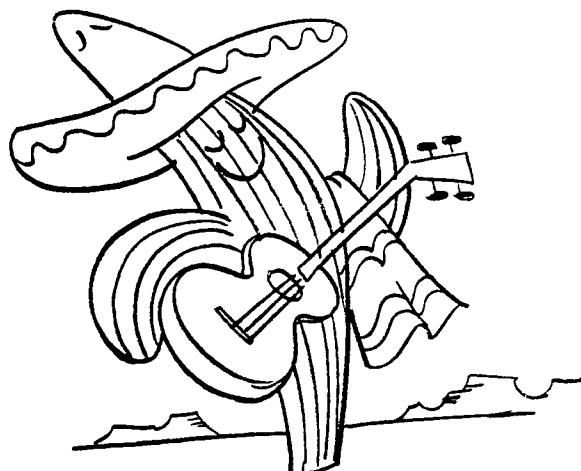
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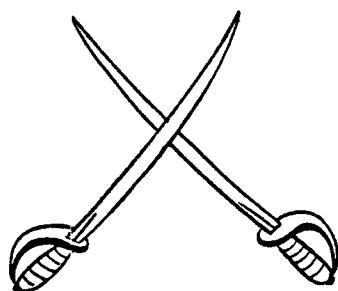
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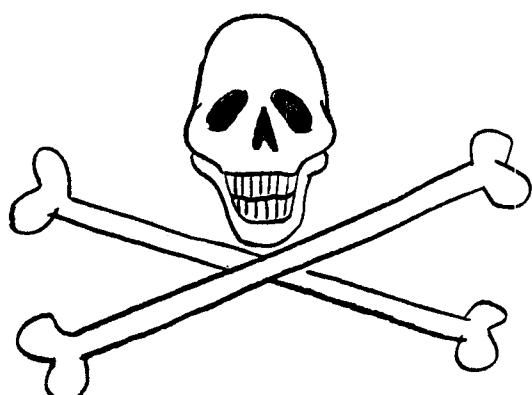
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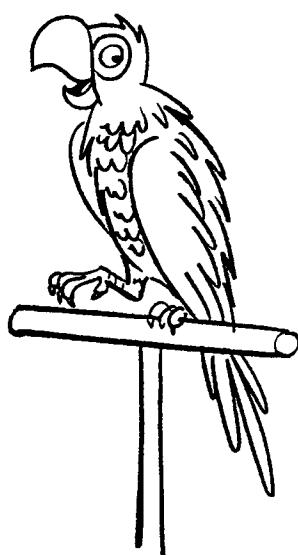
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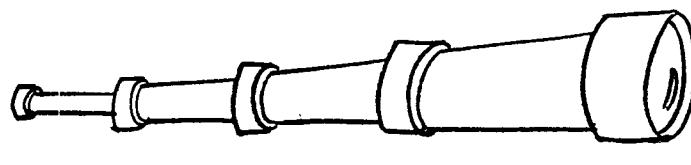
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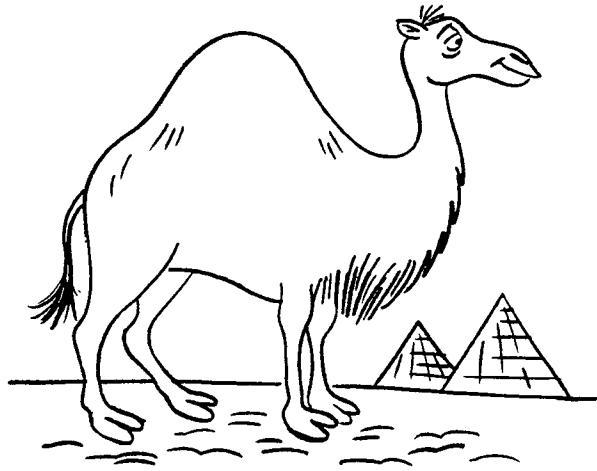
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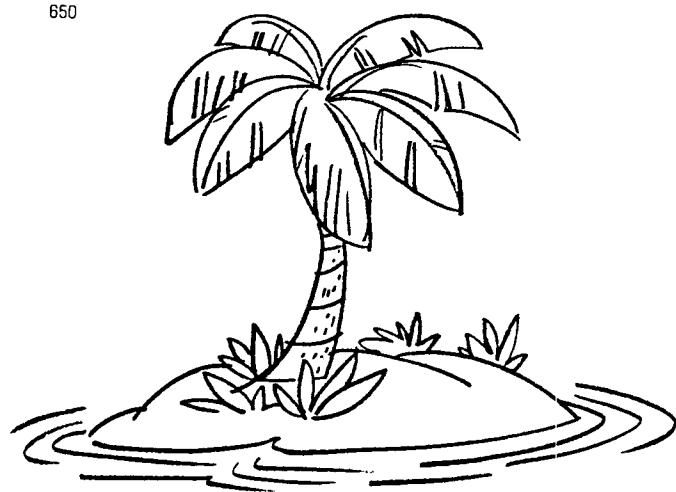
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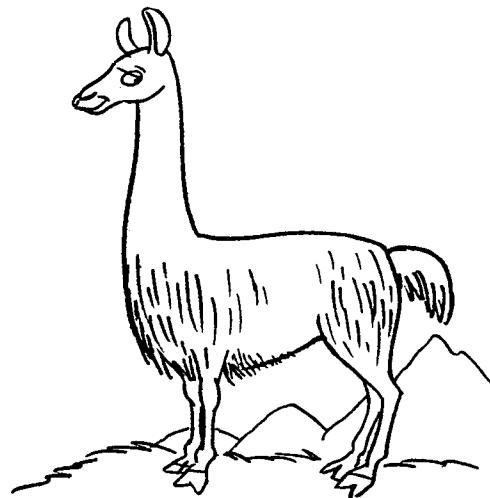
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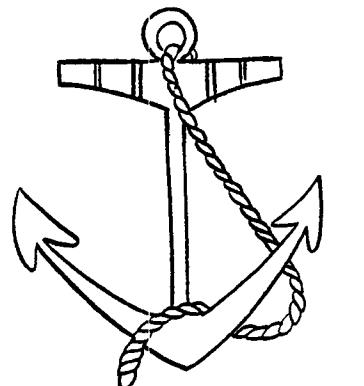
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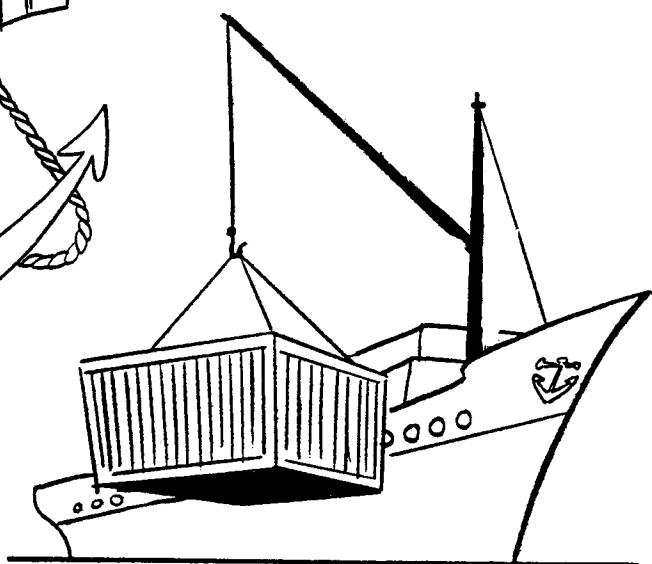
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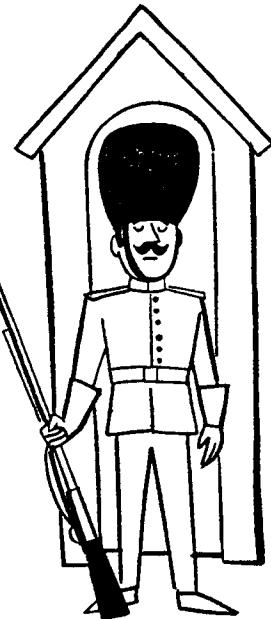
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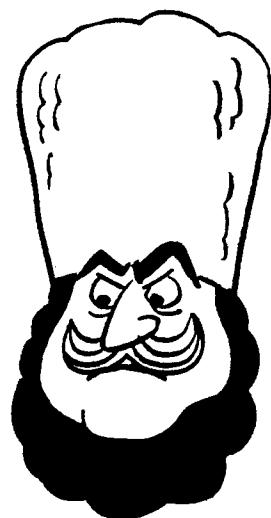
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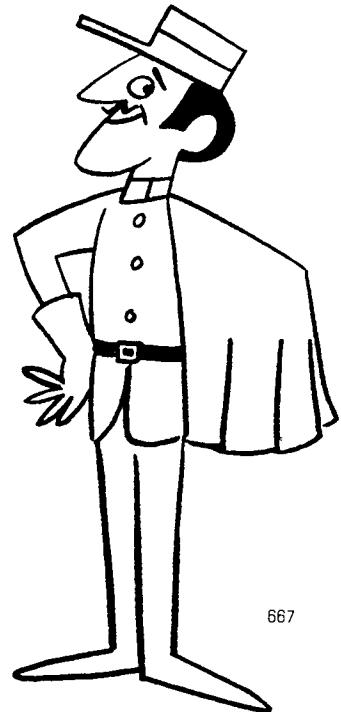
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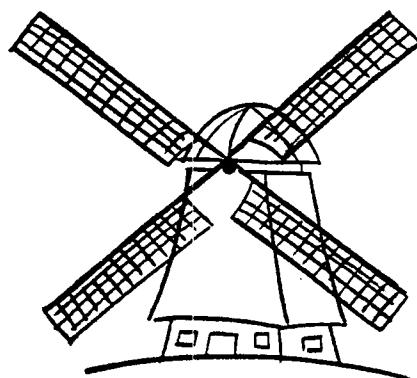
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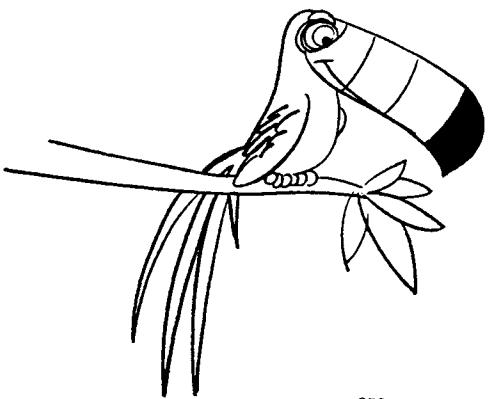
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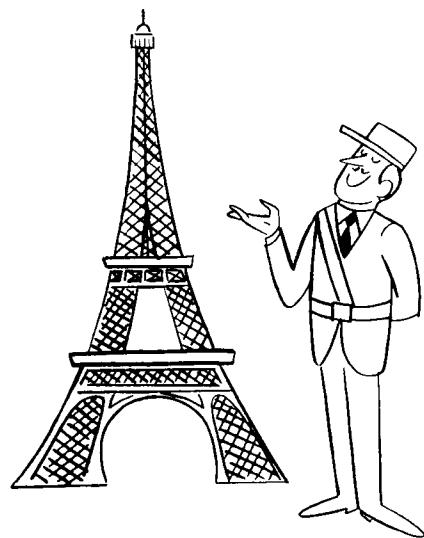
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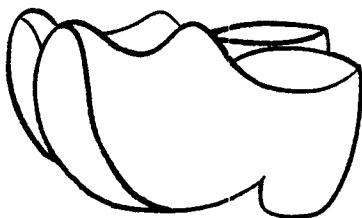
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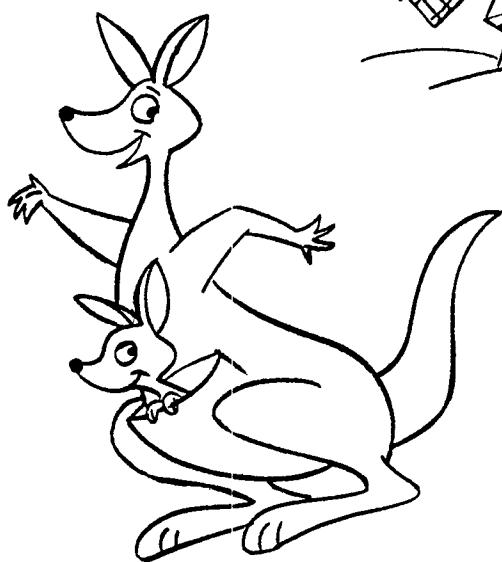
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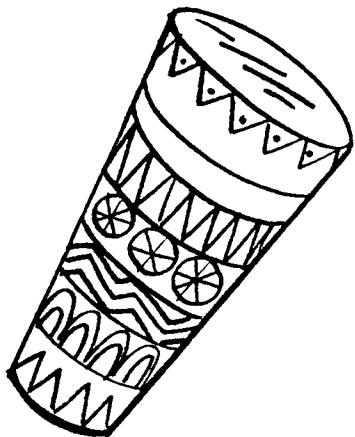
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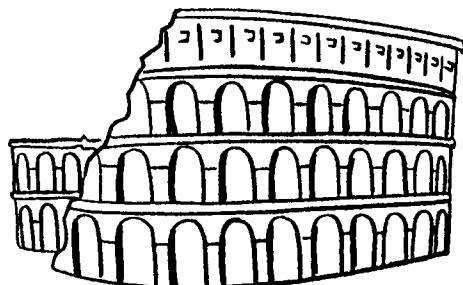
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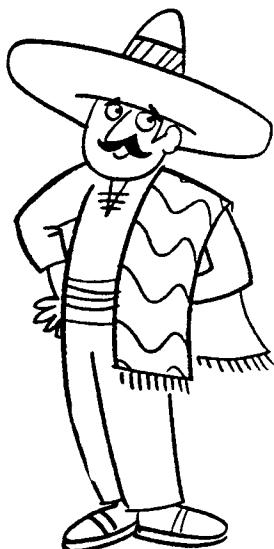
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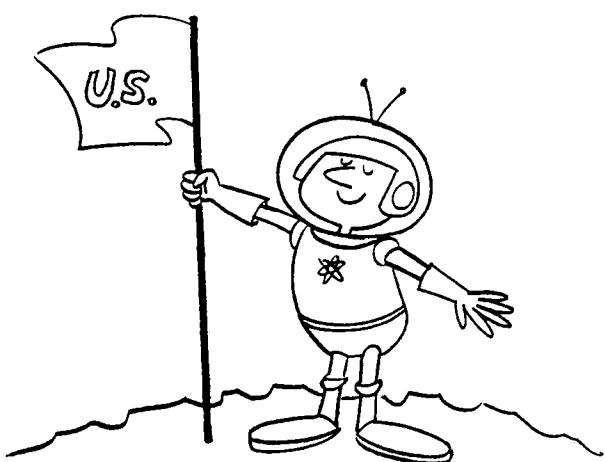
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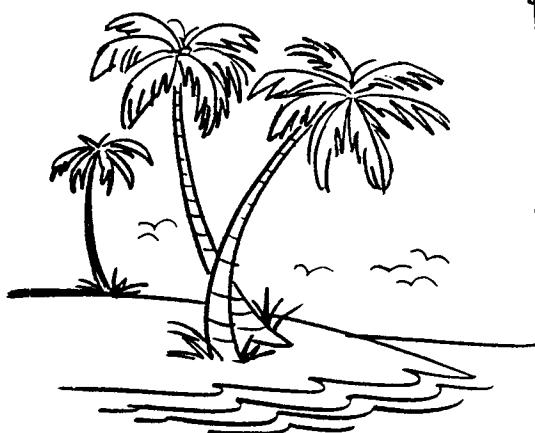
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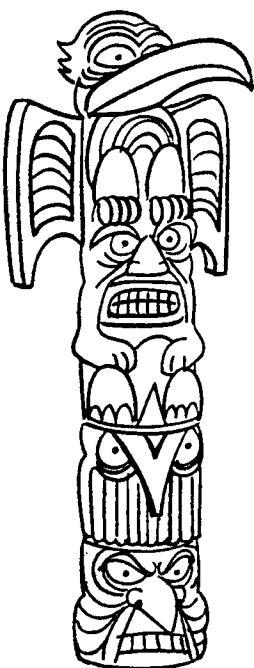
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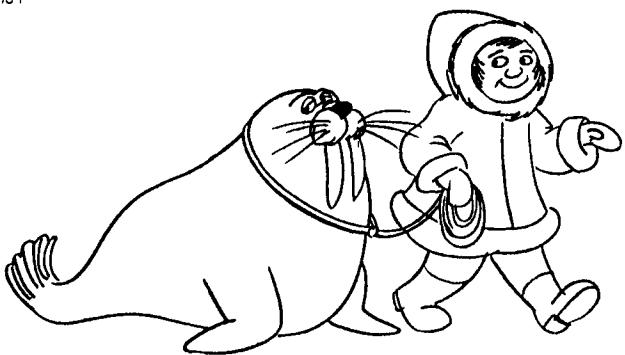
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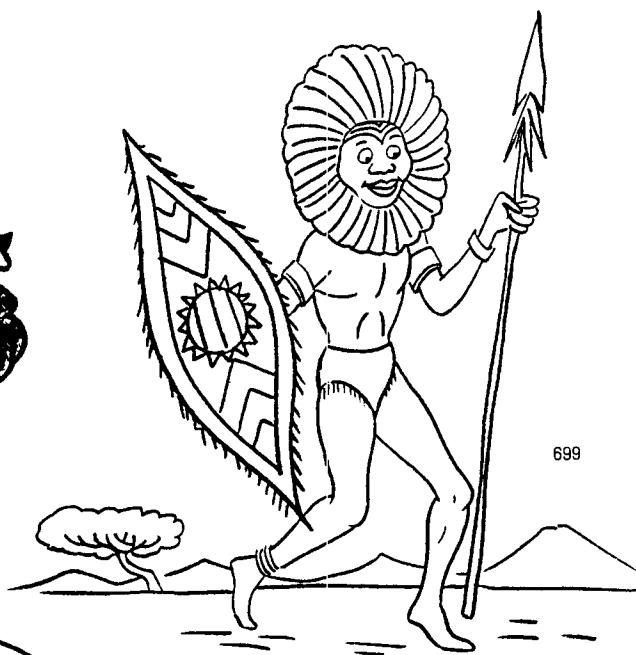
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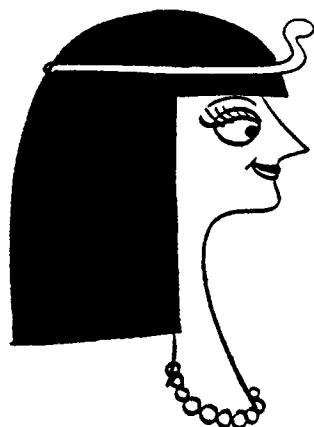
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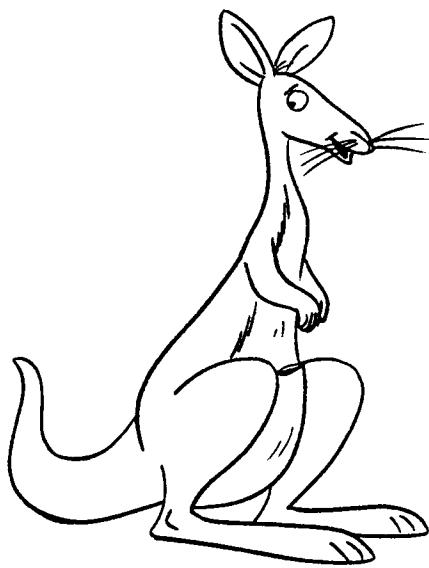
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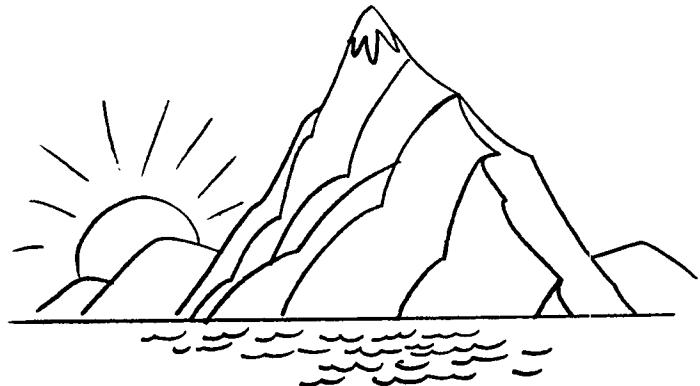
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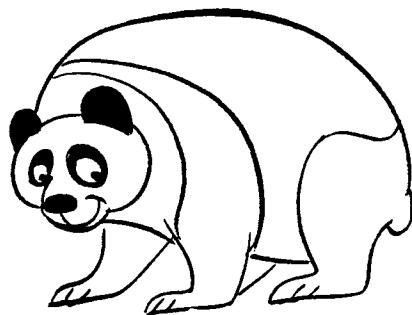
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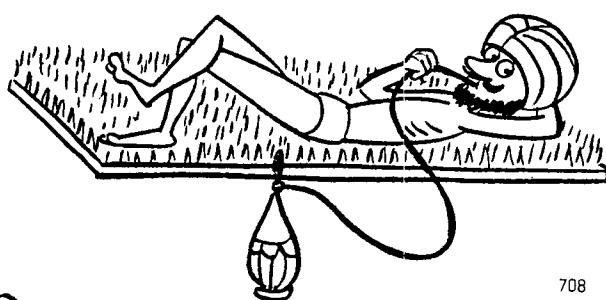
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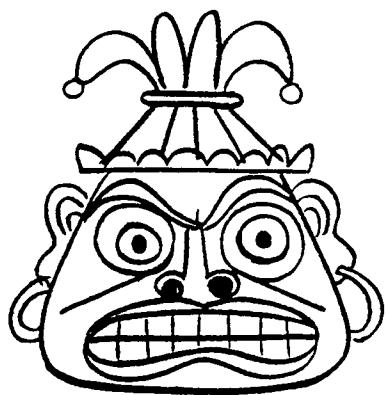
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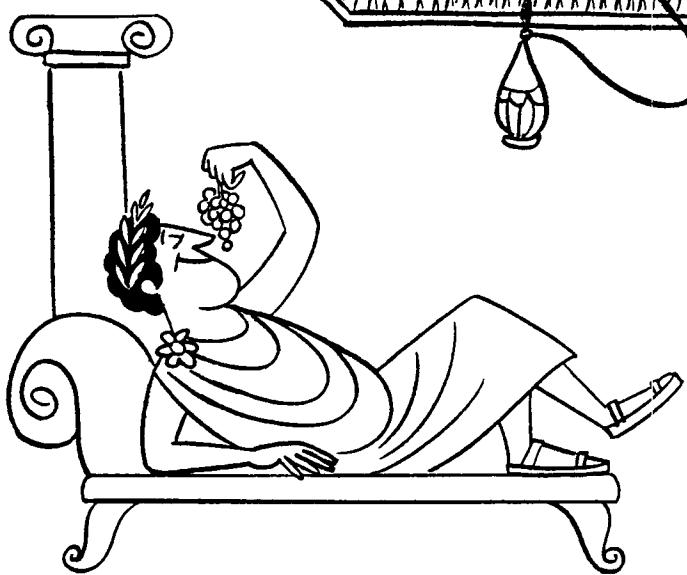
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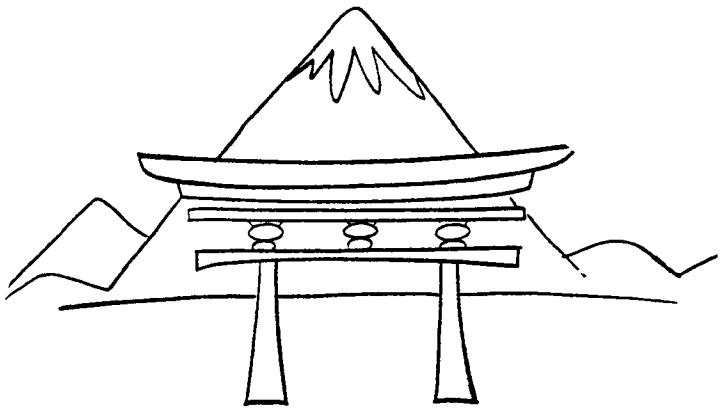
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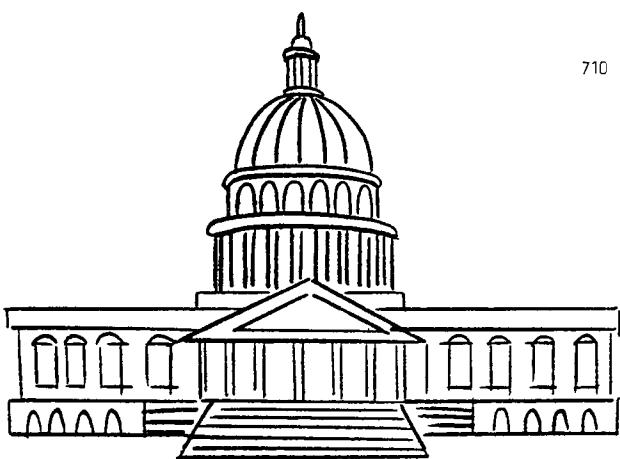
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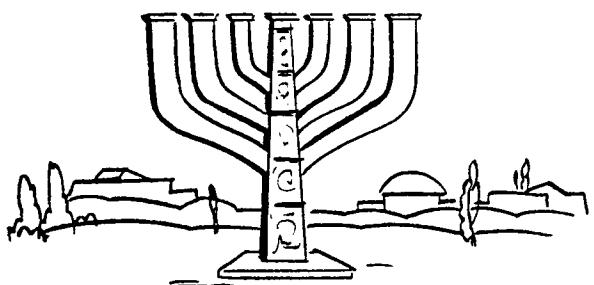
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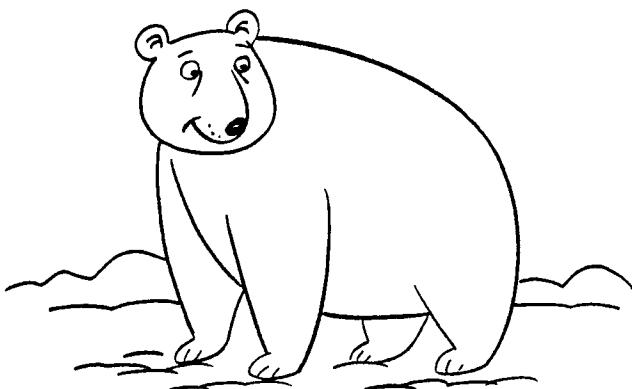
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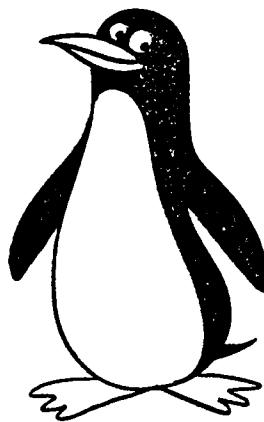
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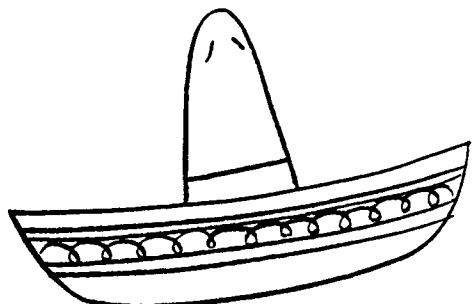
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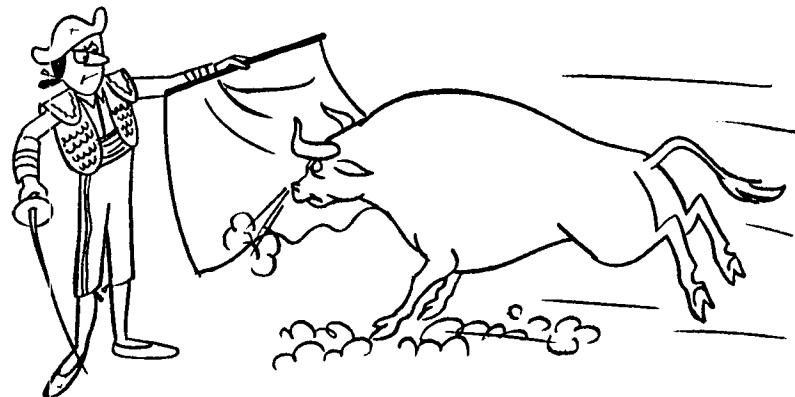
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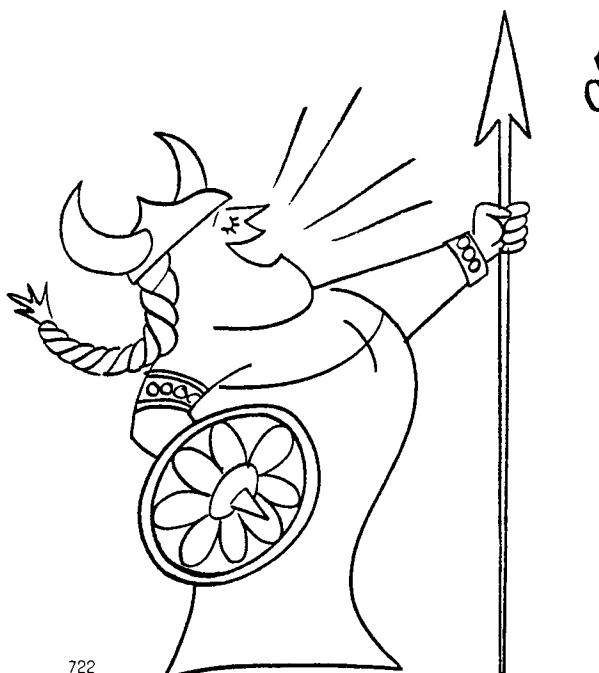
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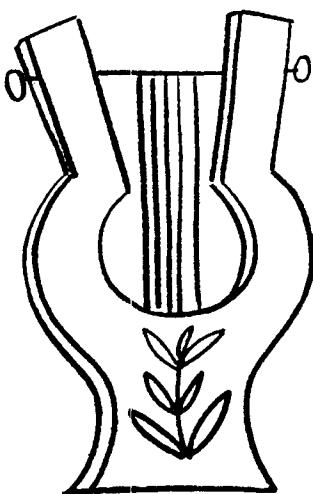
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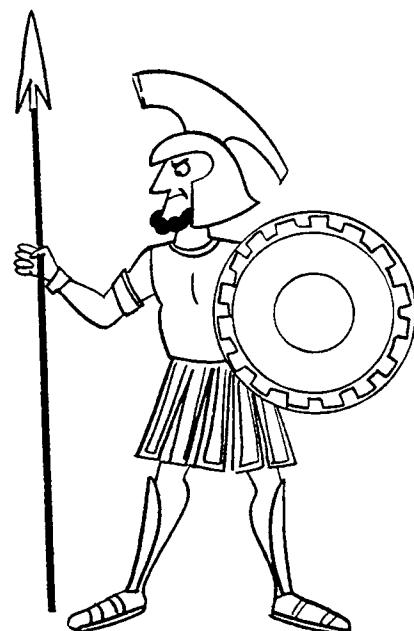
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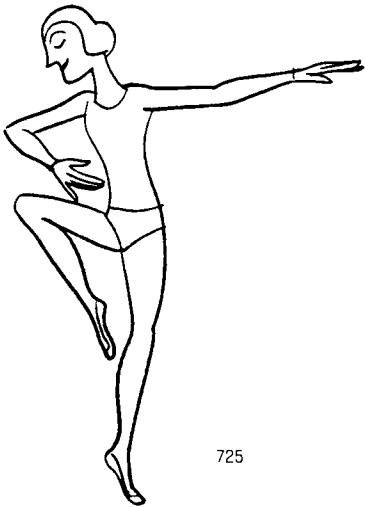
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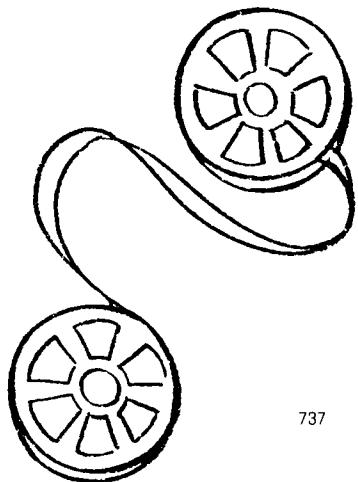


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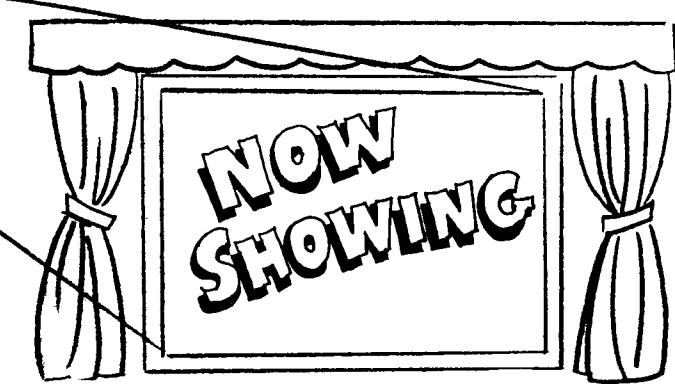
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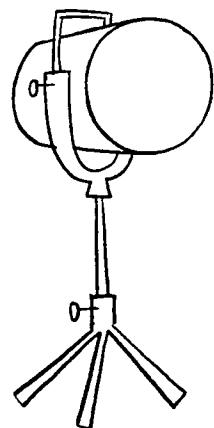
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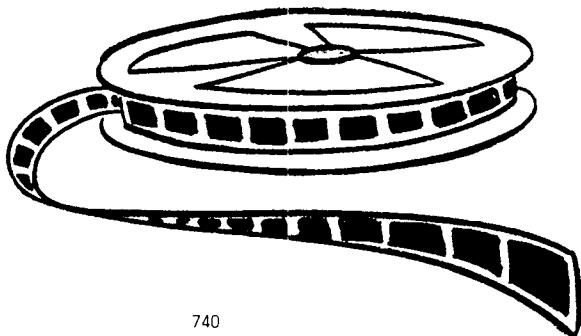
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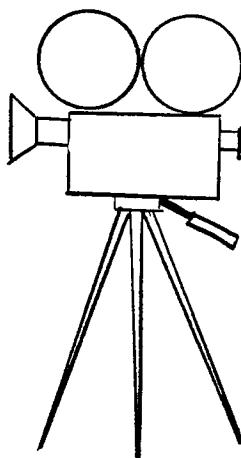
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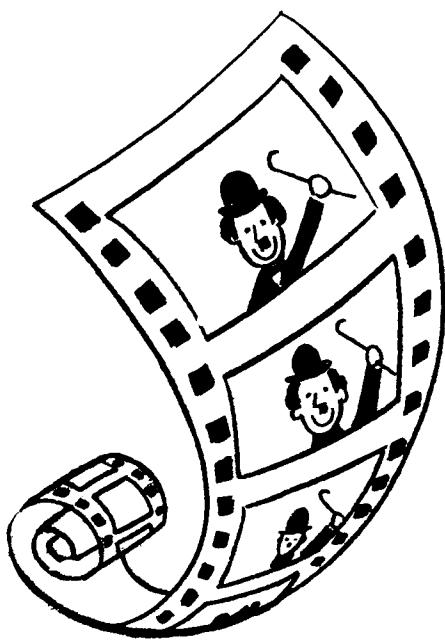
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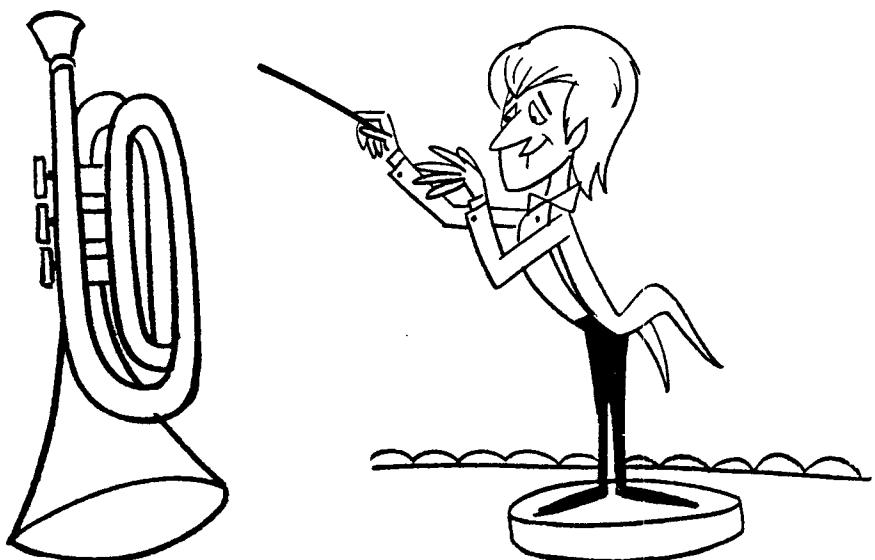


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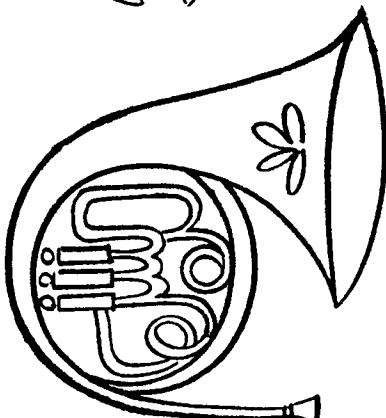
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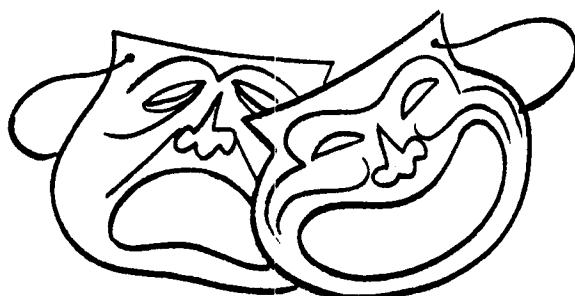
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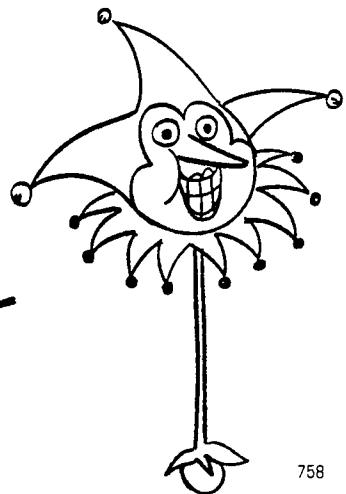
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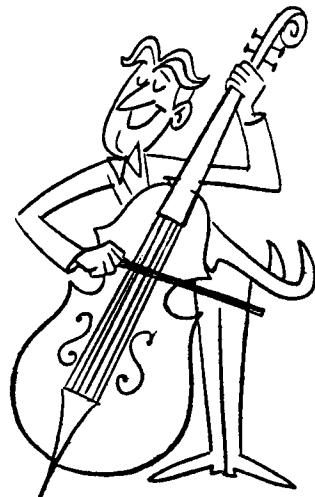
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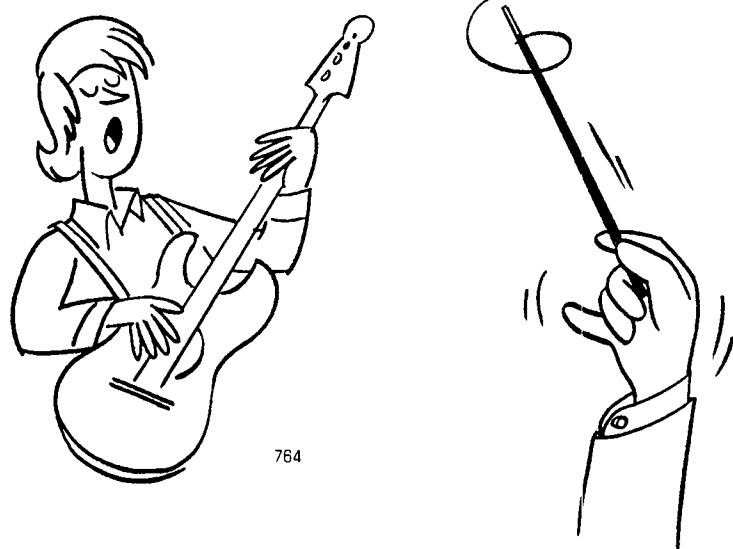
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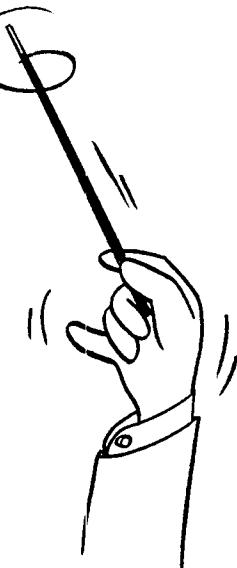
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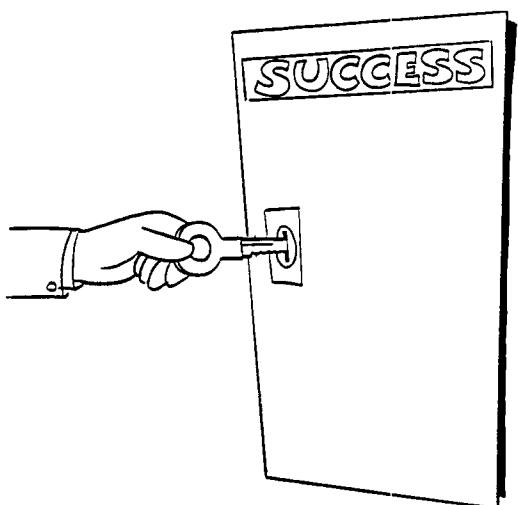
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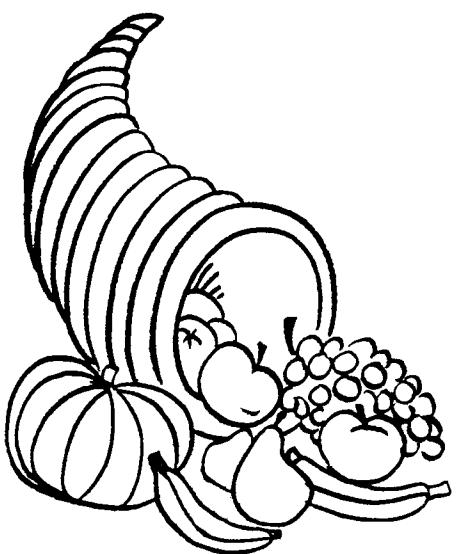
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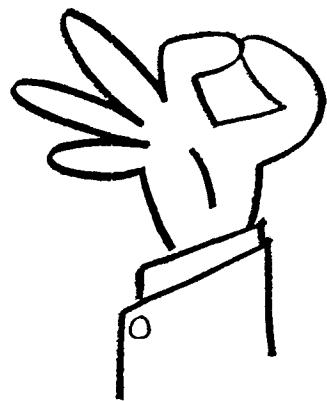
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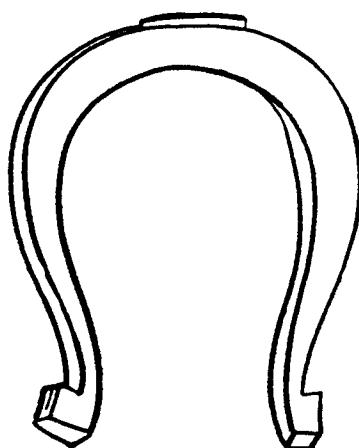
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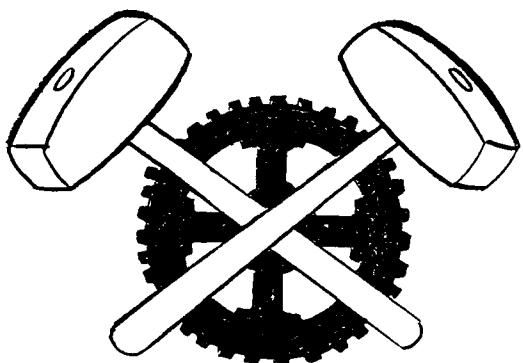
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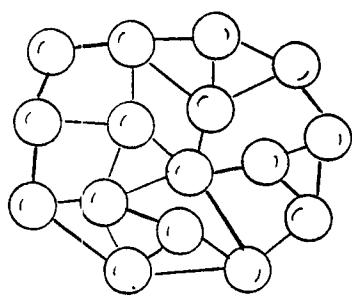
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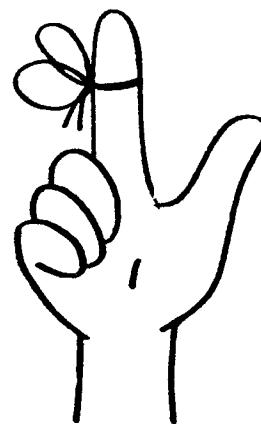
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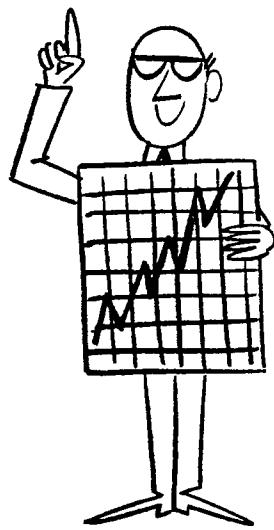
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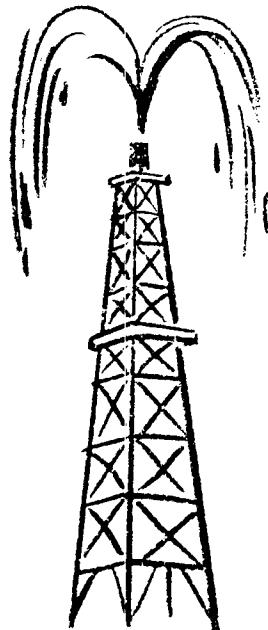
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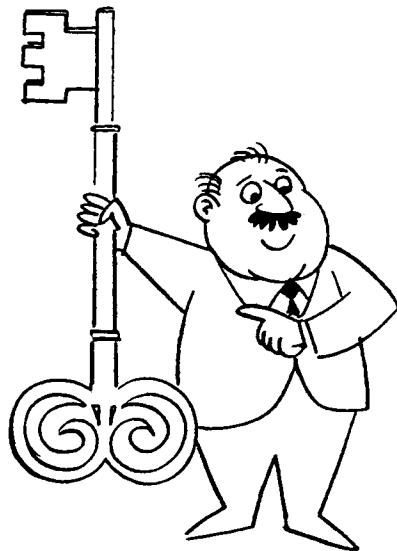
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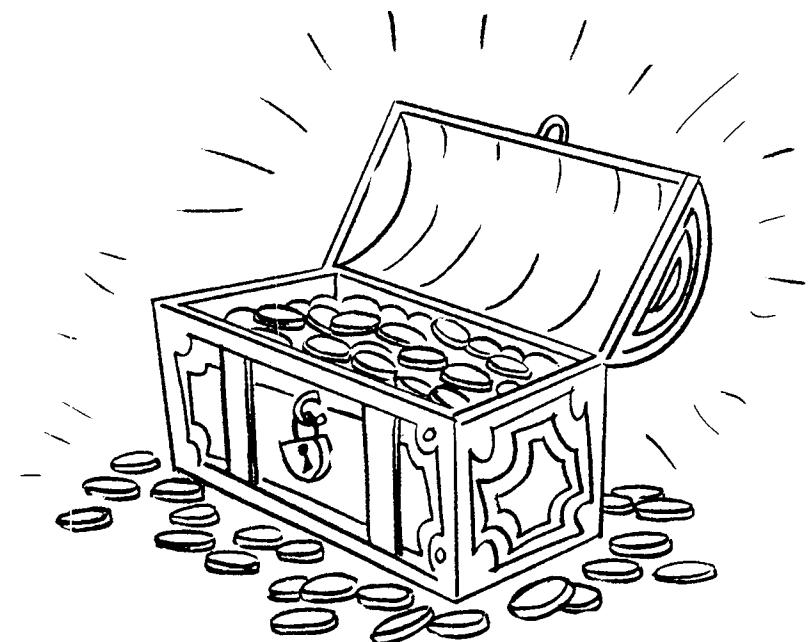
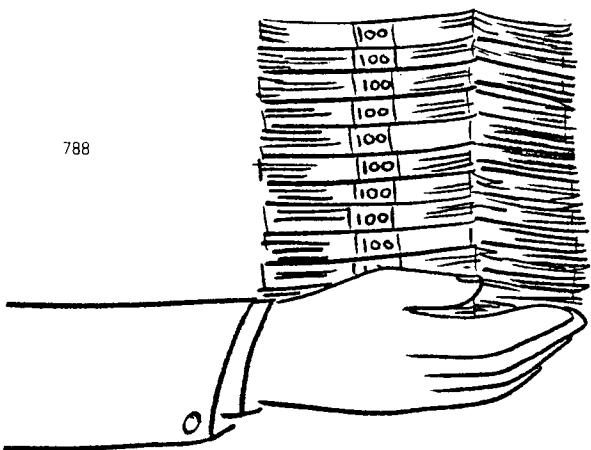


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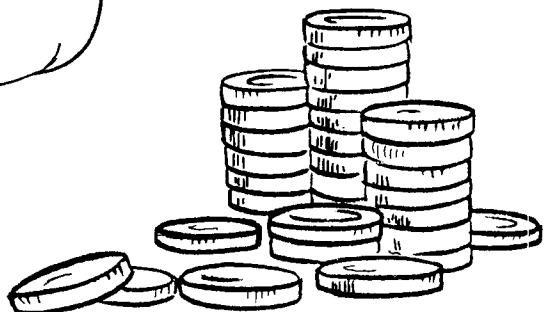
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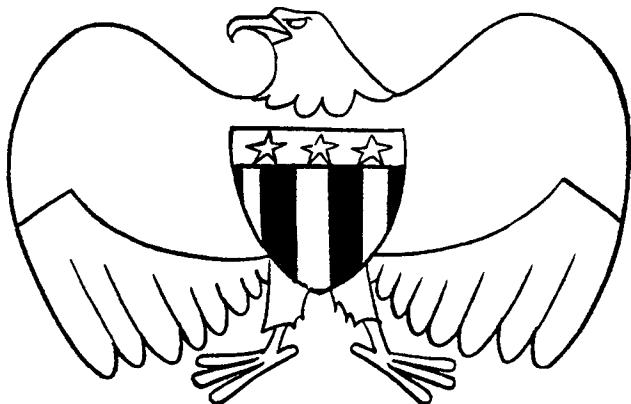
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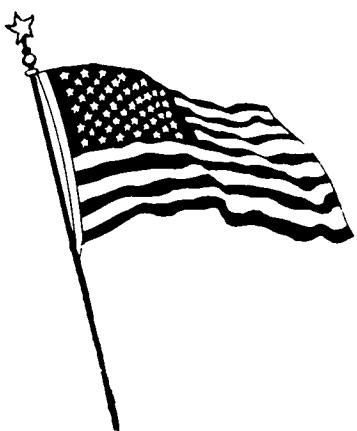
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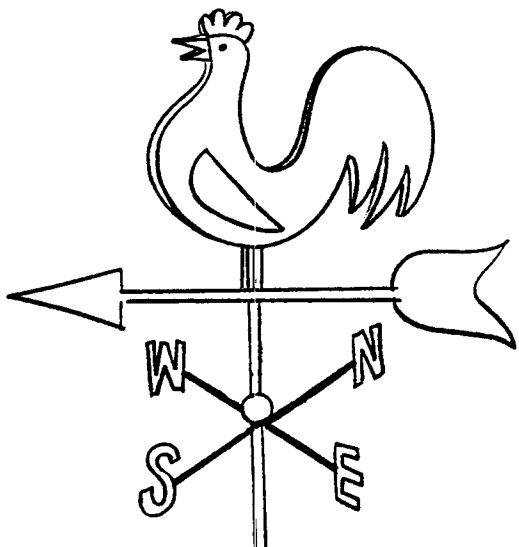
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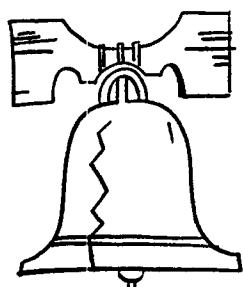
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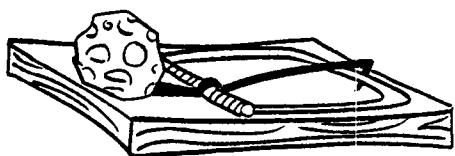
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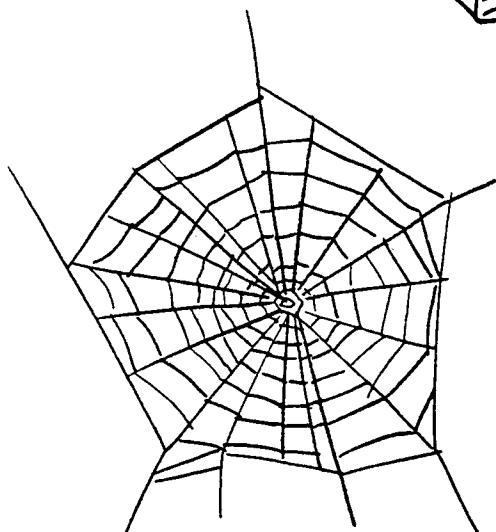
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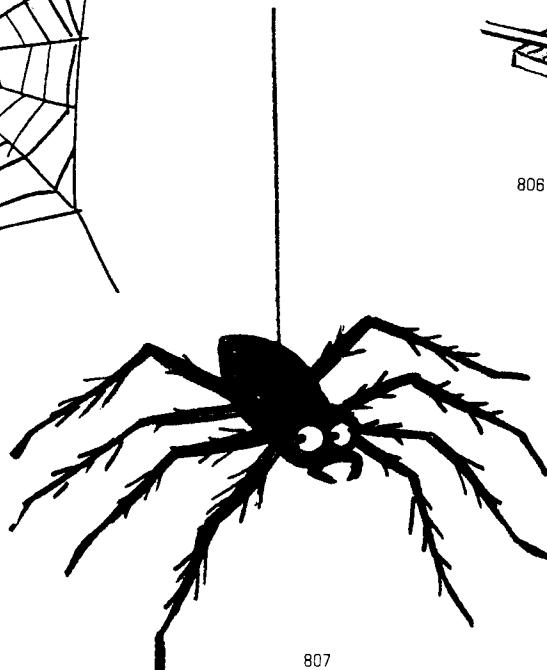
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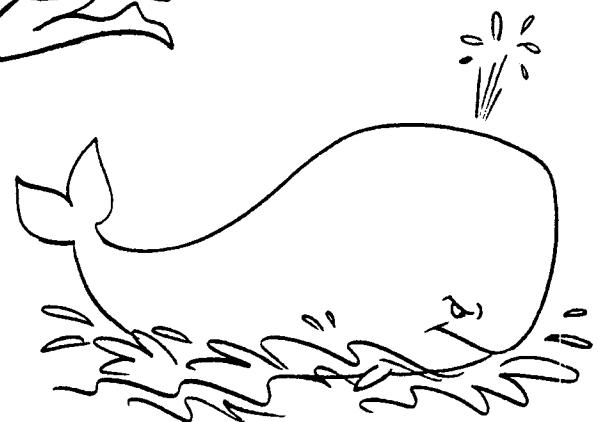
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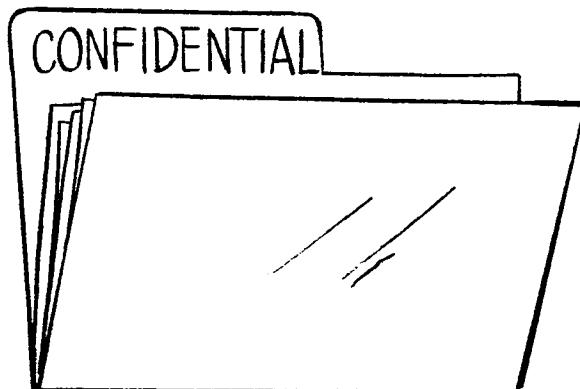
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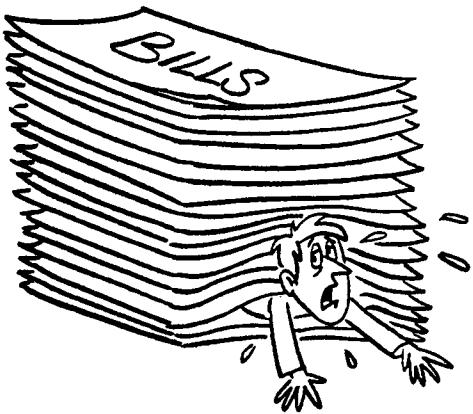
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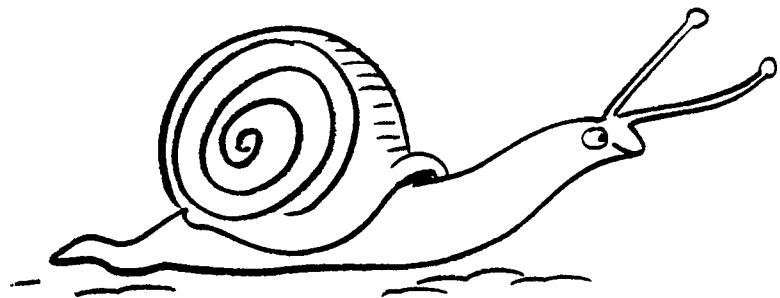
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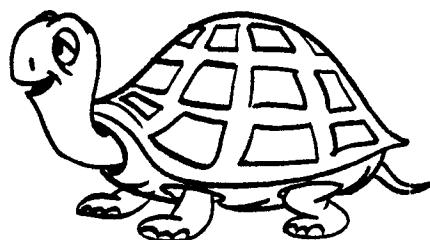
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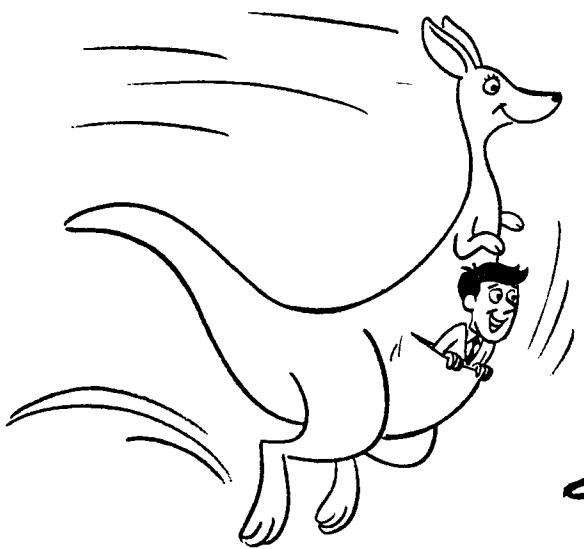
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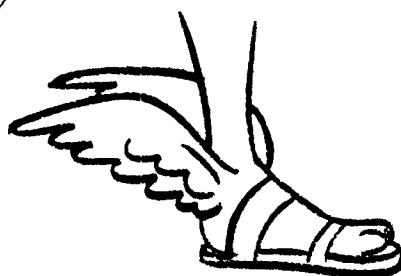
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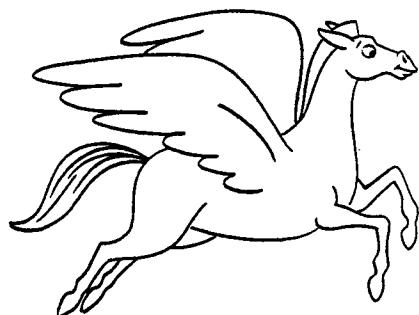
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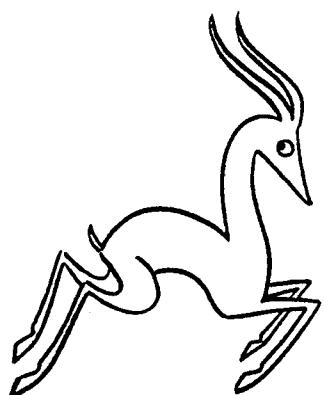
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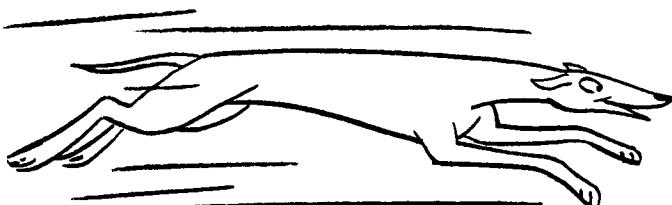
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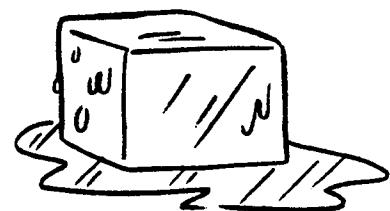
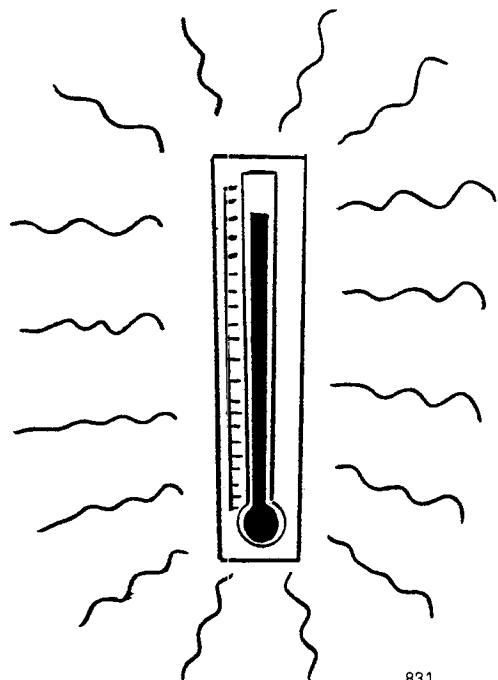
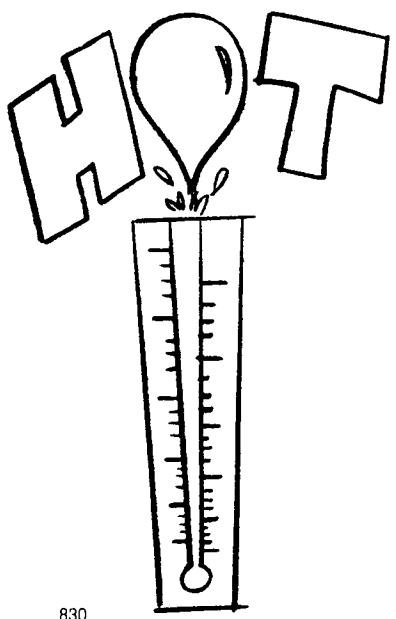
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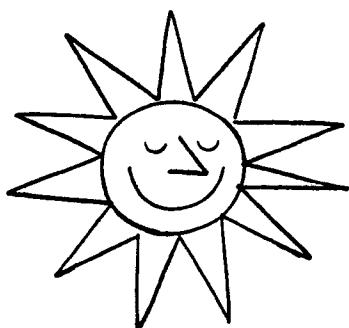
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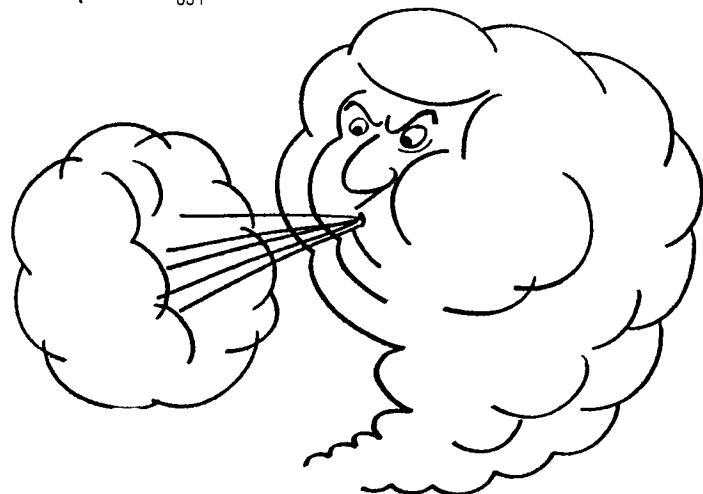
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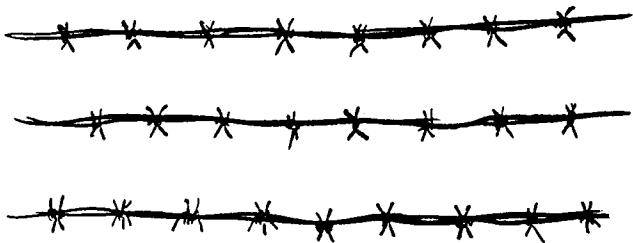
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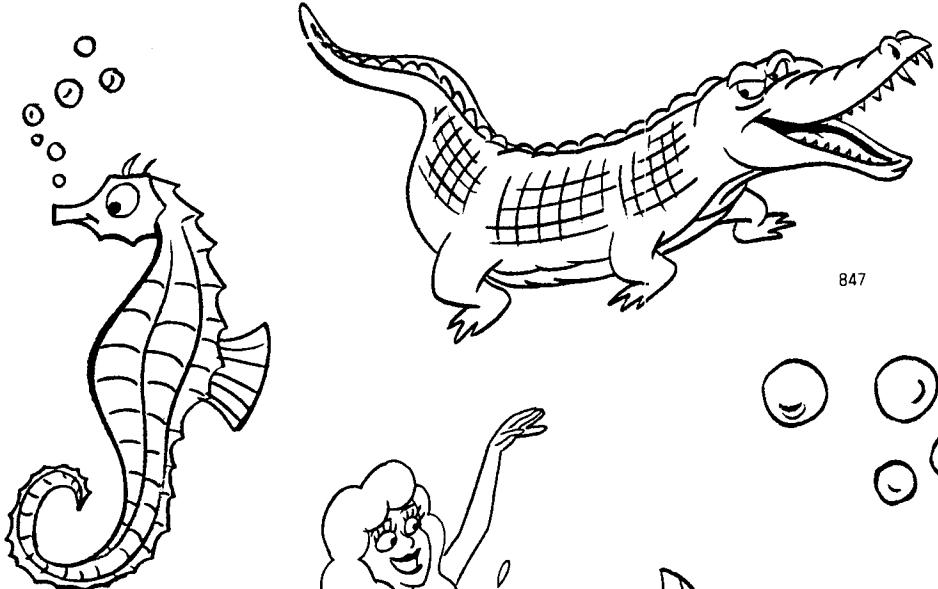
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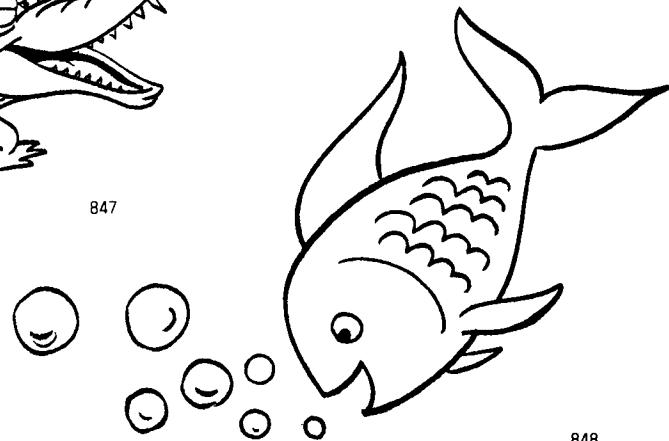
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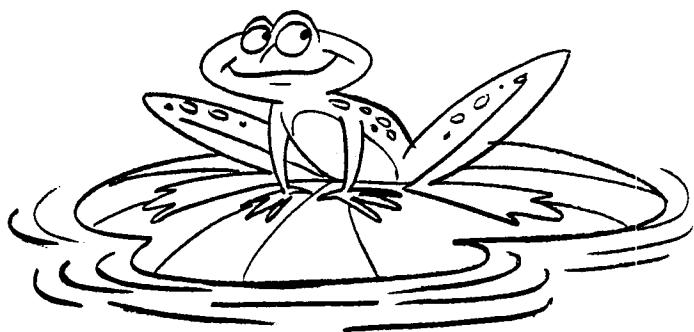


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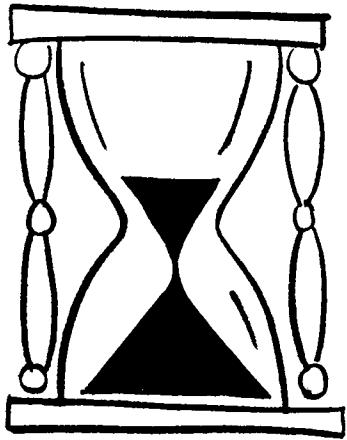
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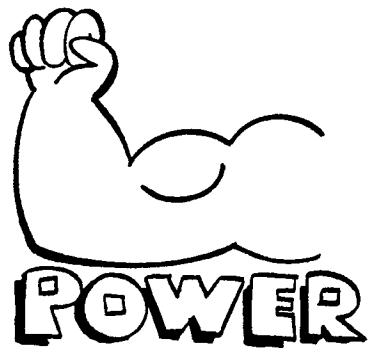
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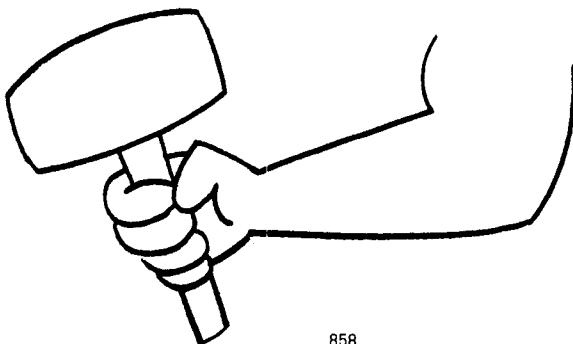
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**POWER**

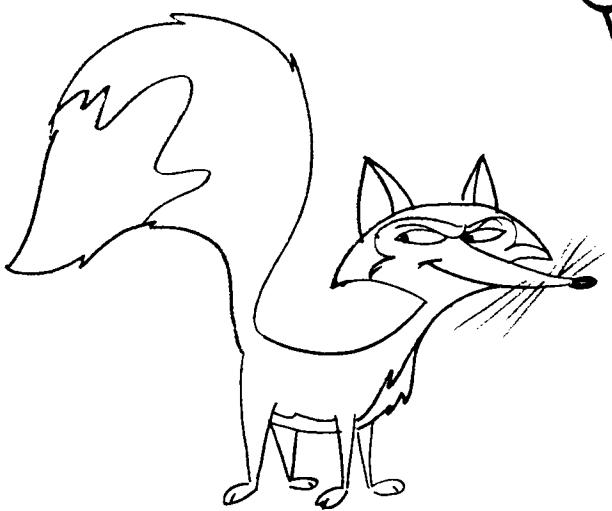
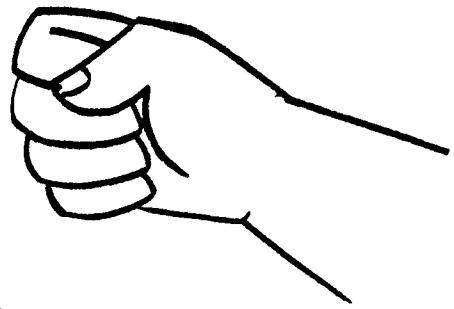
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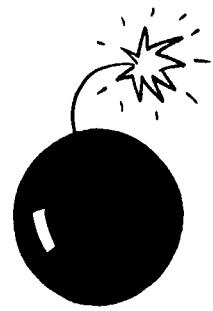
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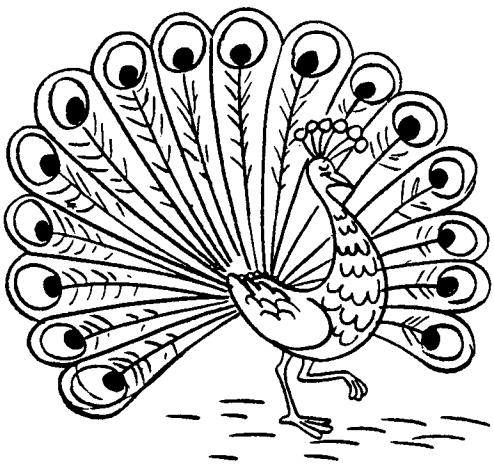
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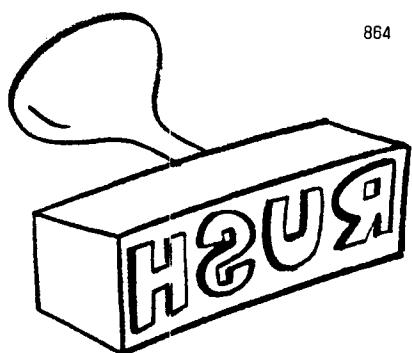
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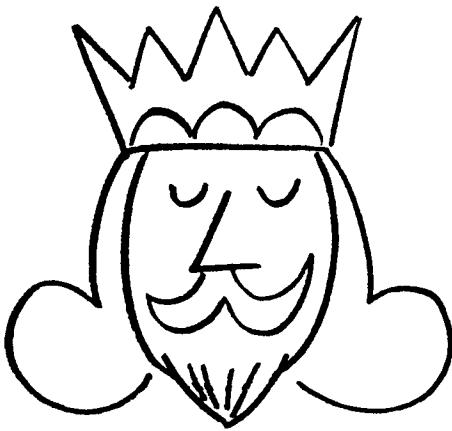
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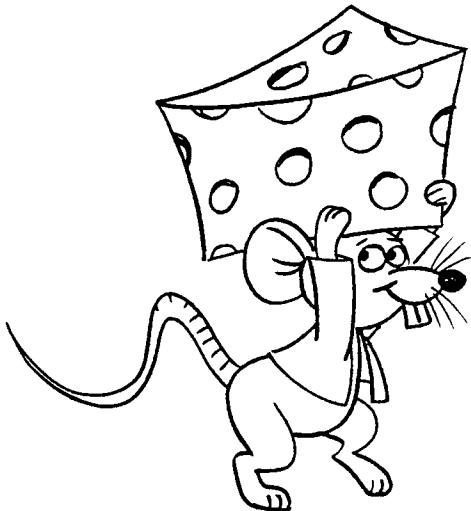
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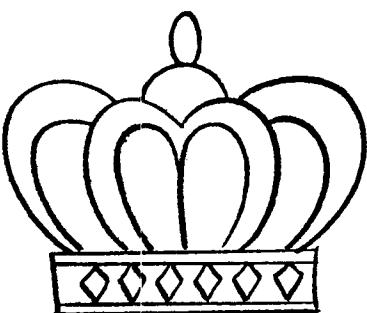
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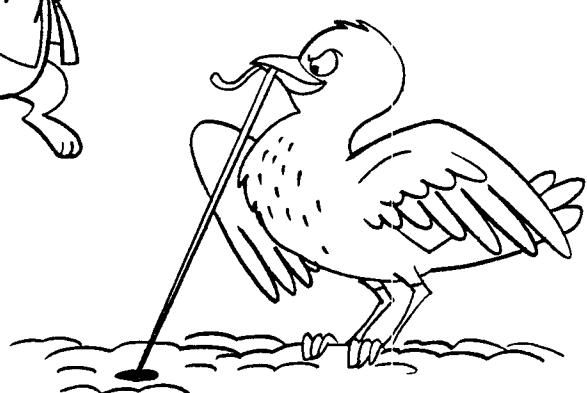
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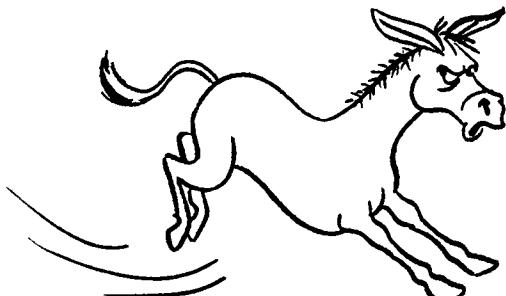
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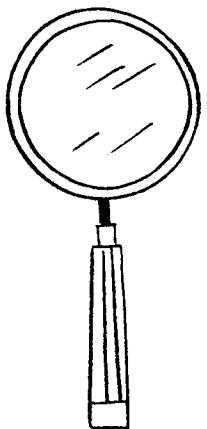
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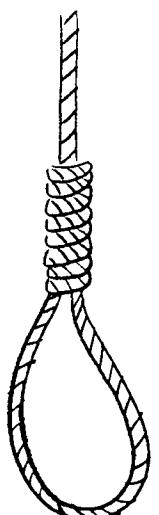
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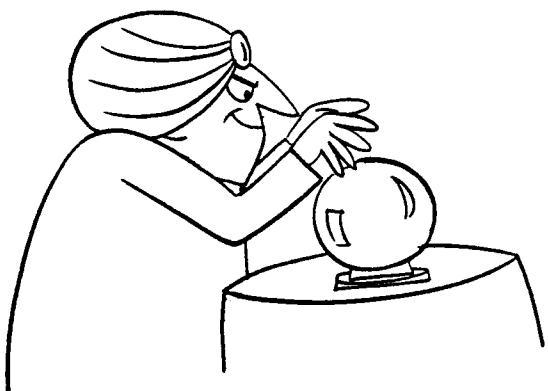
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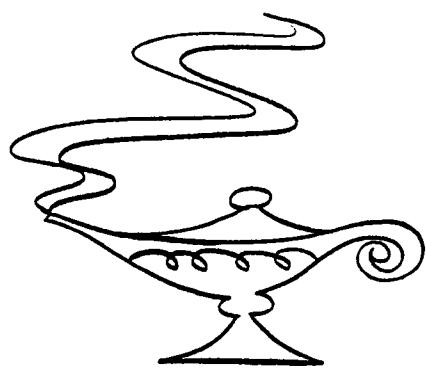
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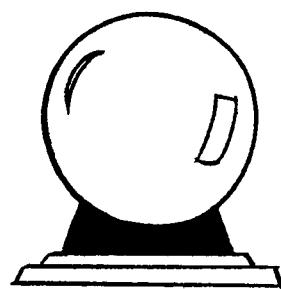
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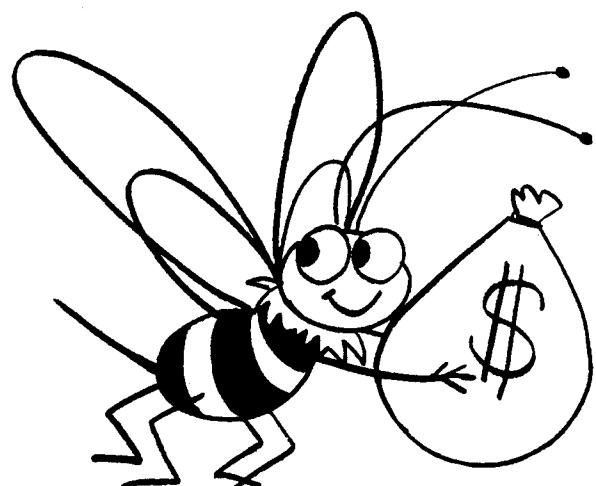
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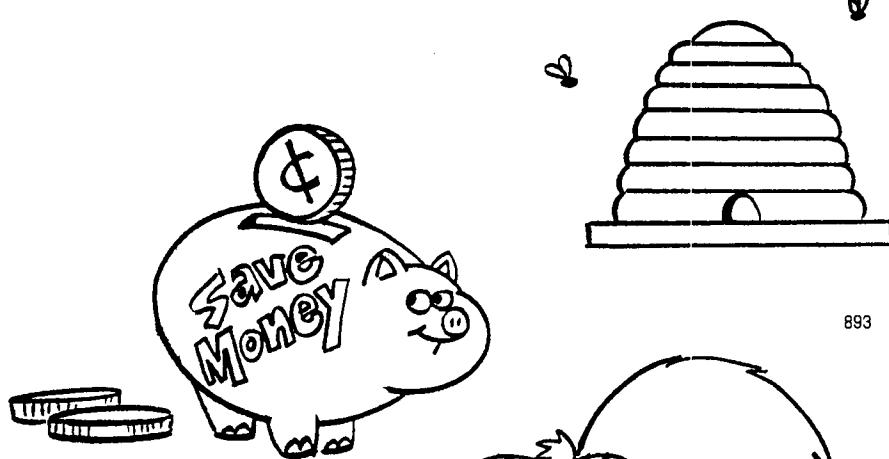
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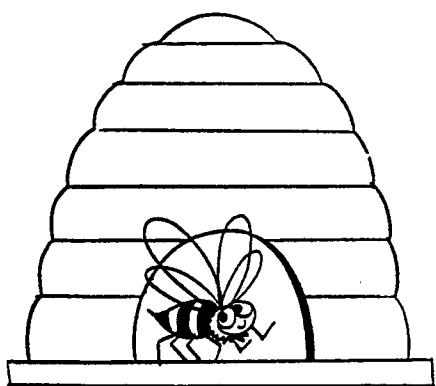
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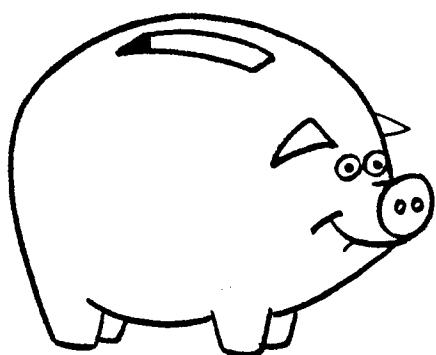


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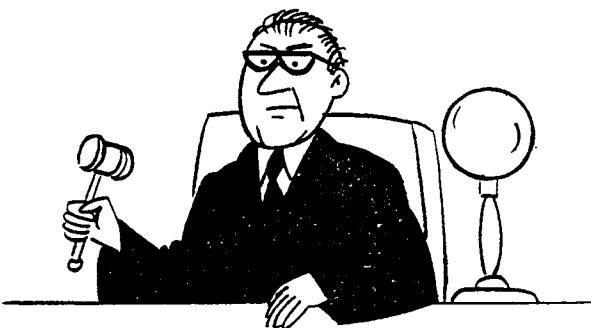


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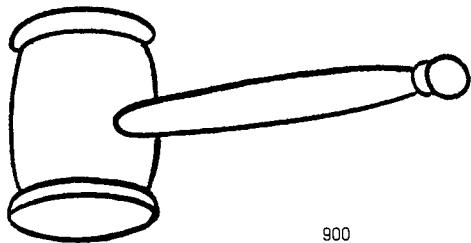


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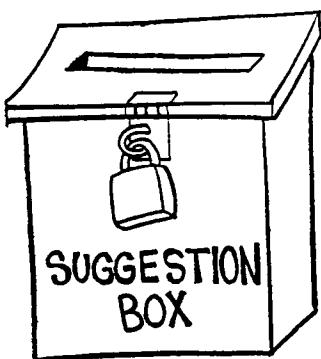
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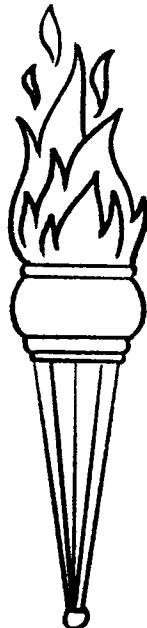
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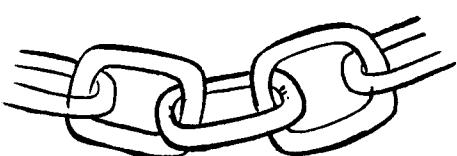
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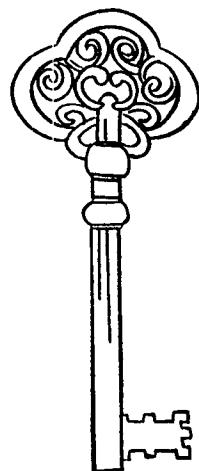
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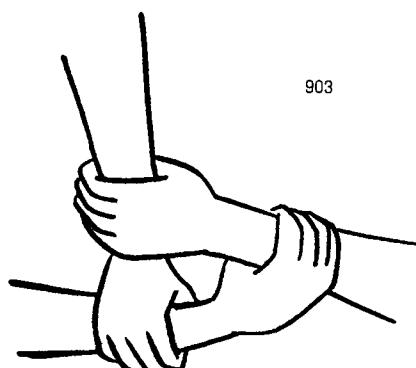
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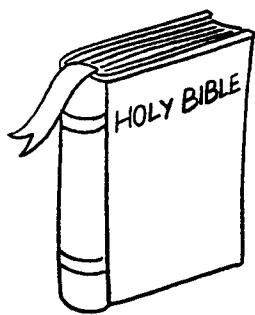
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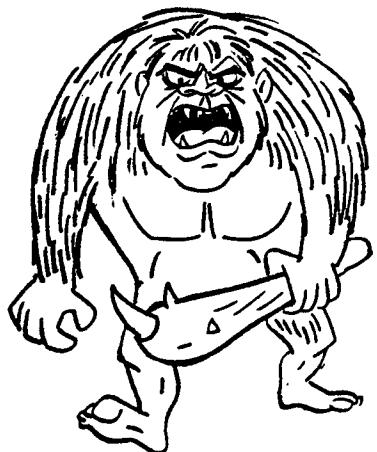
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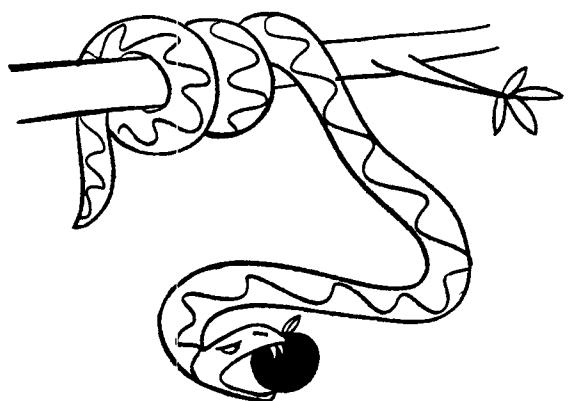
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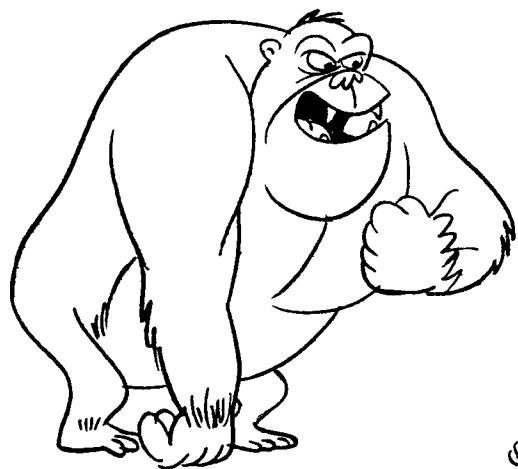
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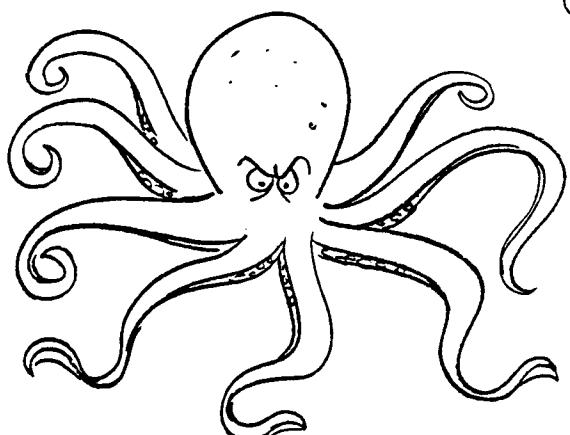
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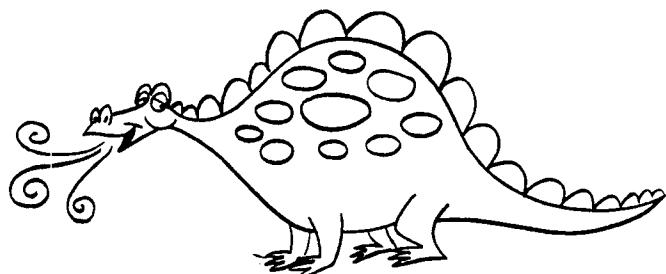
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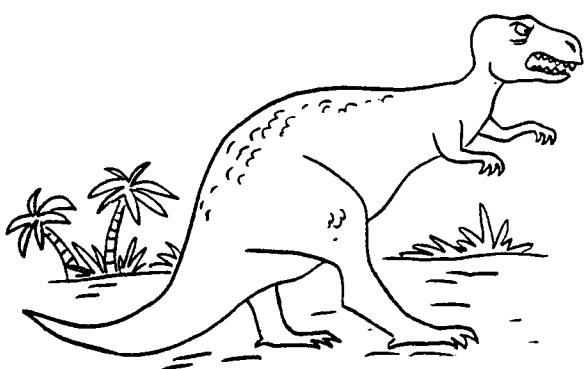
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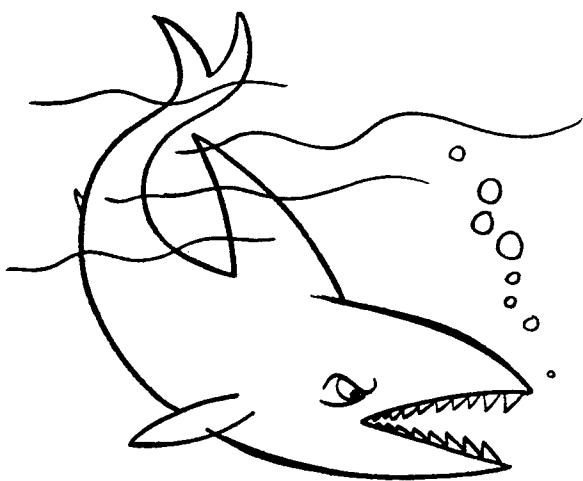
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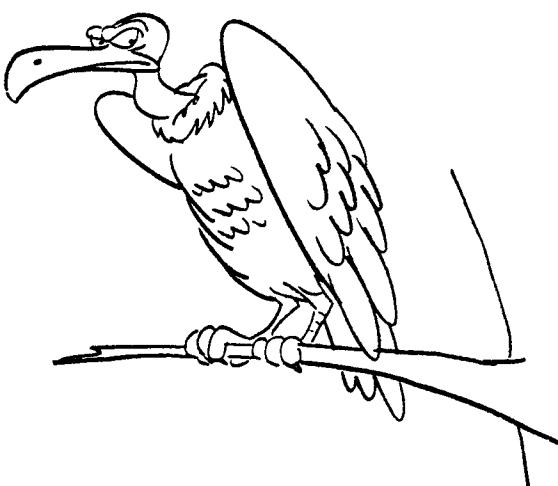
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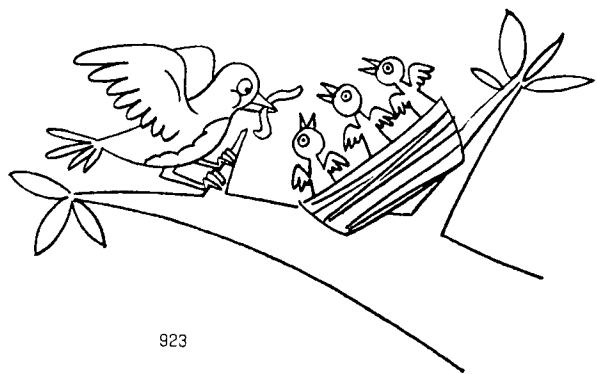
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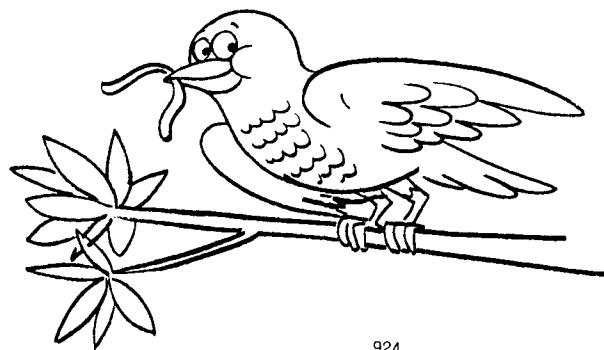
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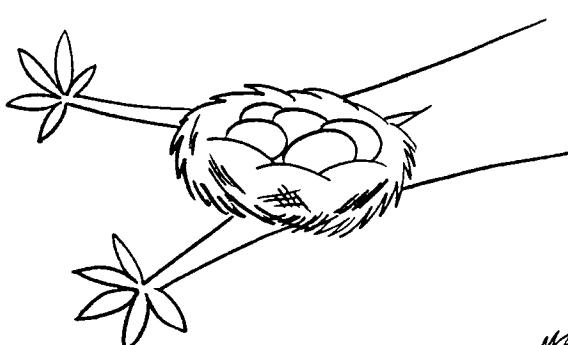
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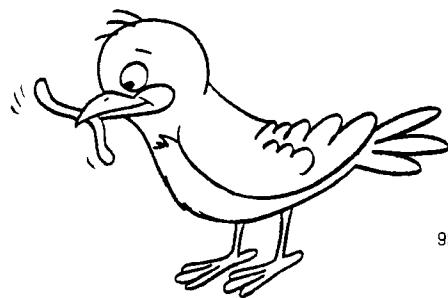
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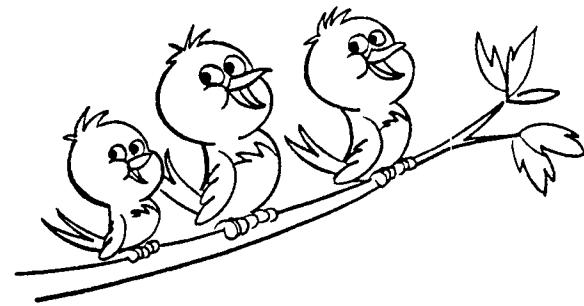
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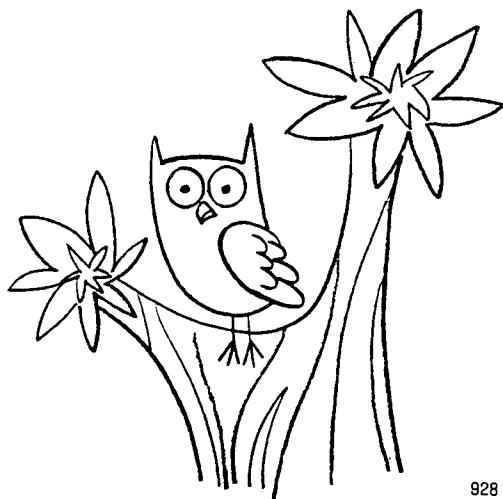
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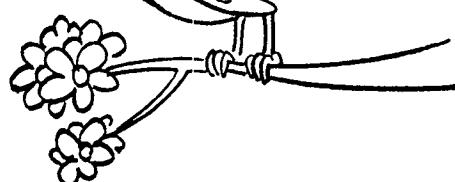
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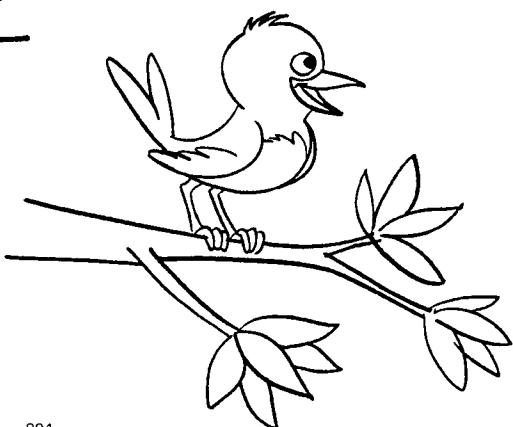
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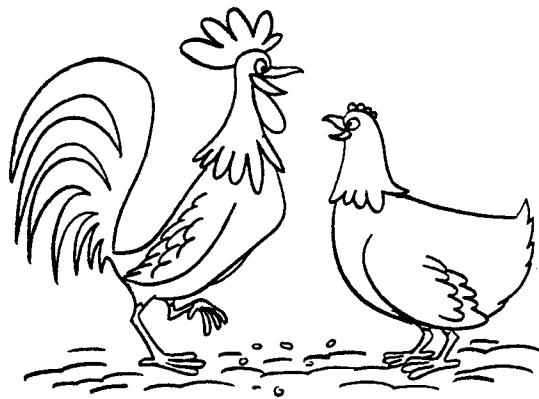
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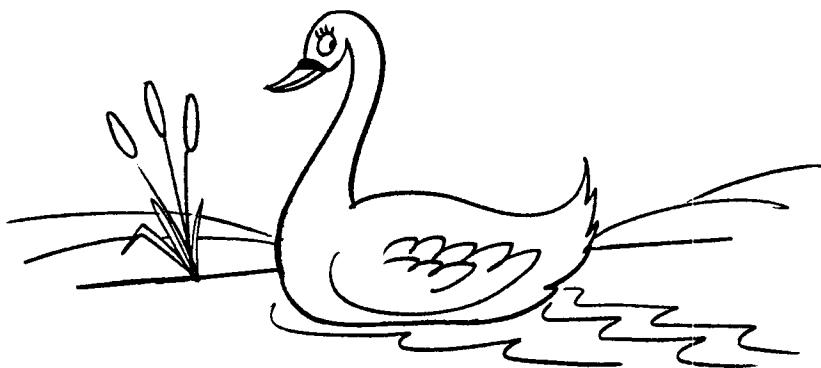
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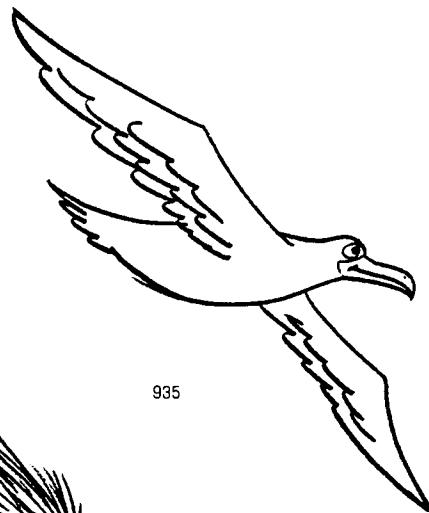
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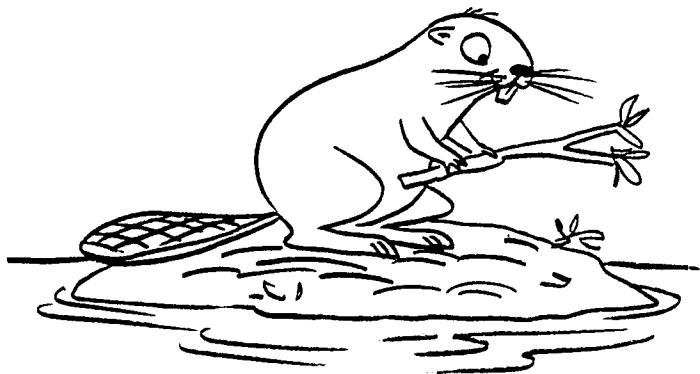
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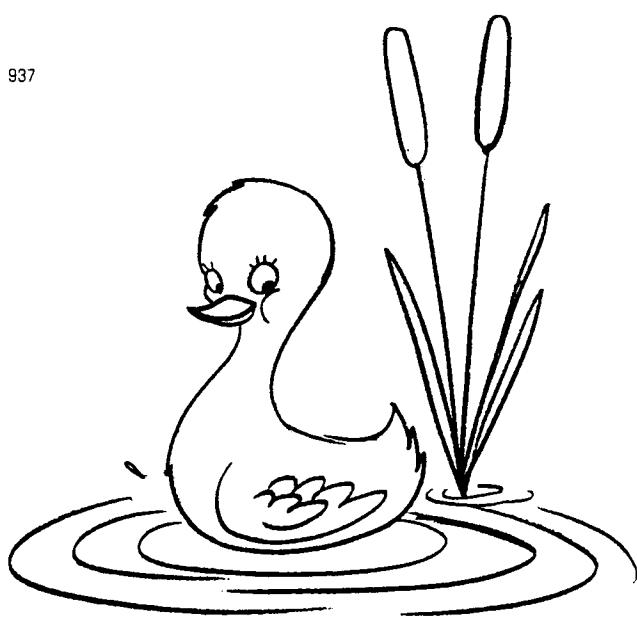
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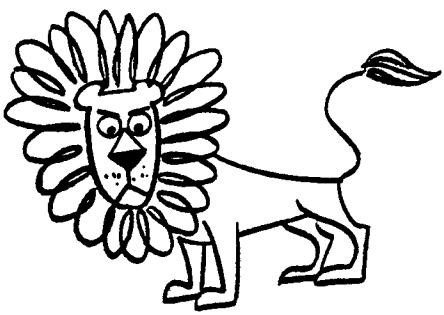
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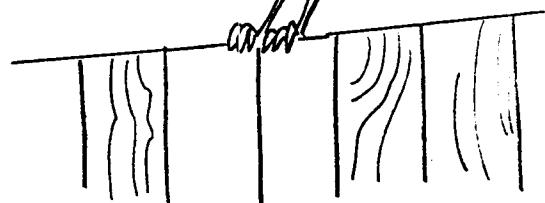
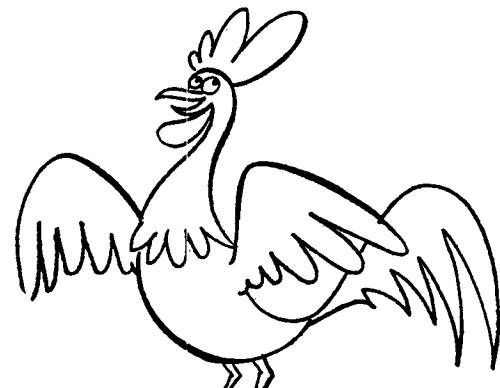
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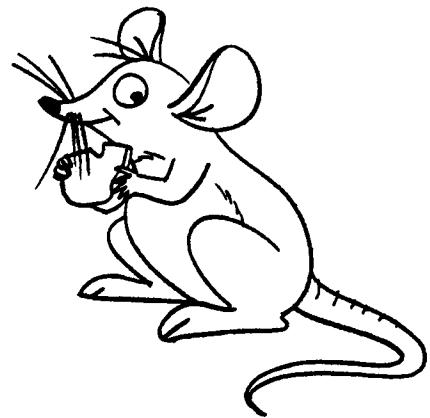
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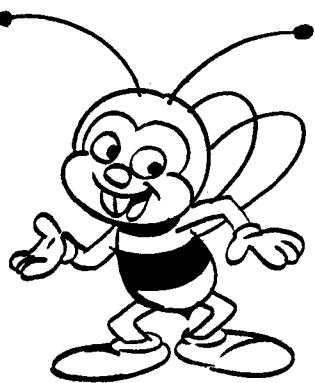
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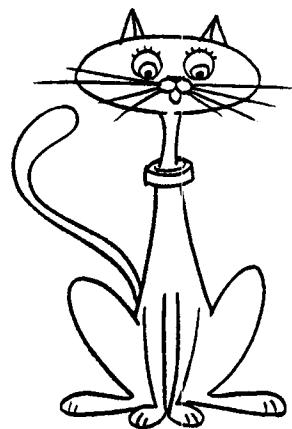
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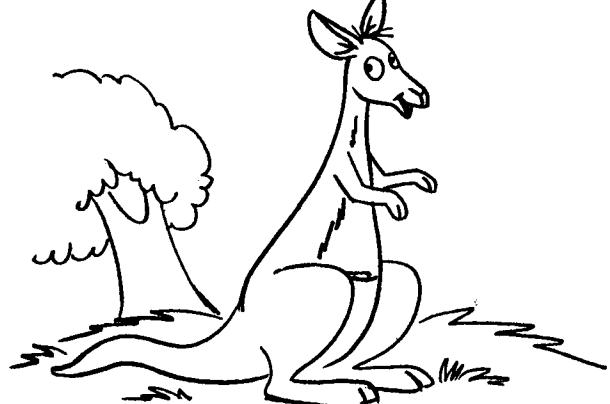
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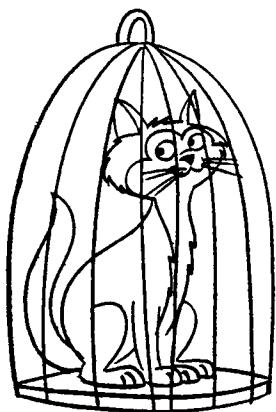
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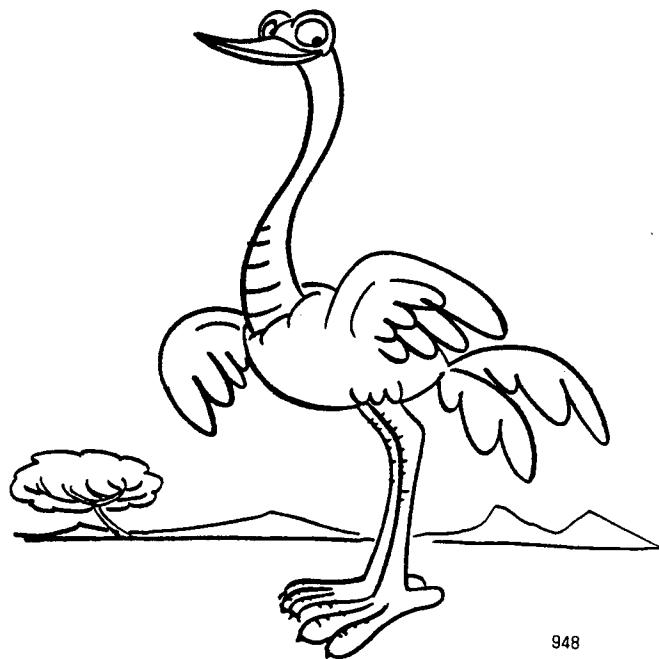
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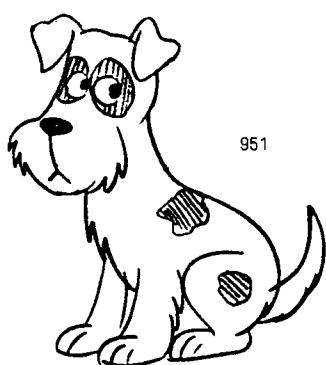
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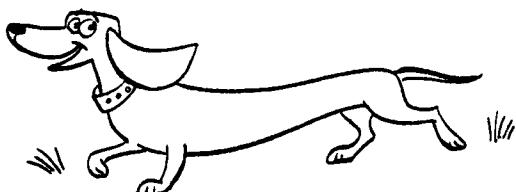
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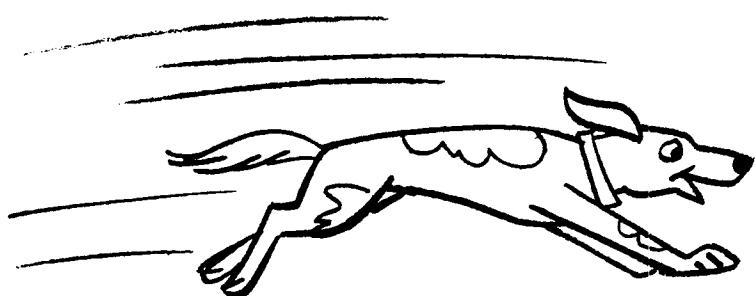
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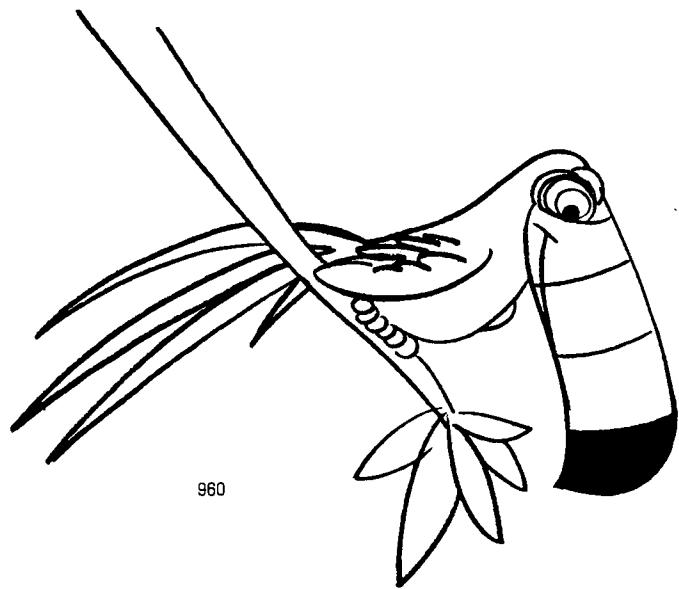
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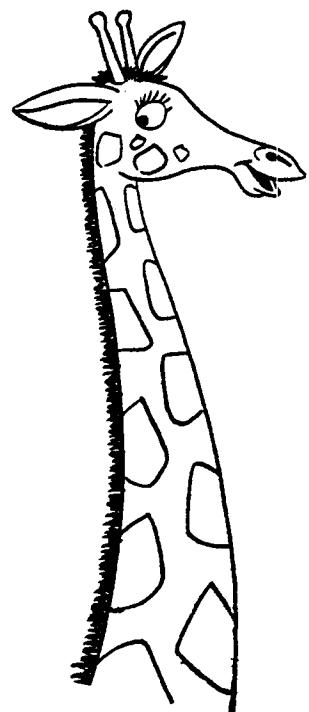
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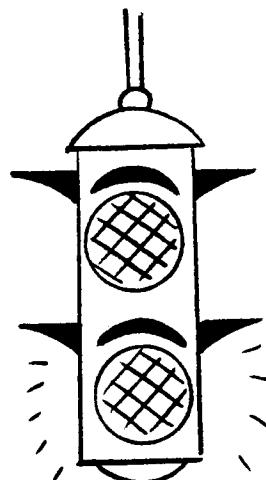
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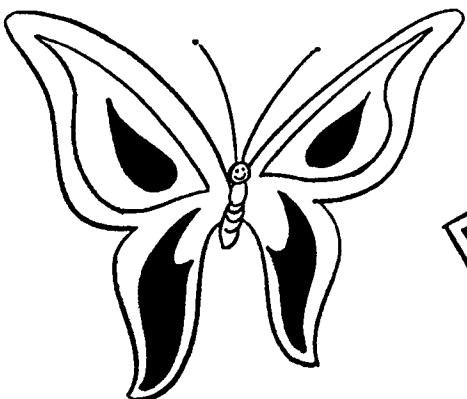
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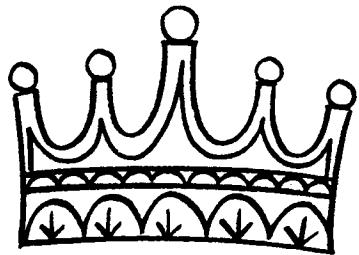
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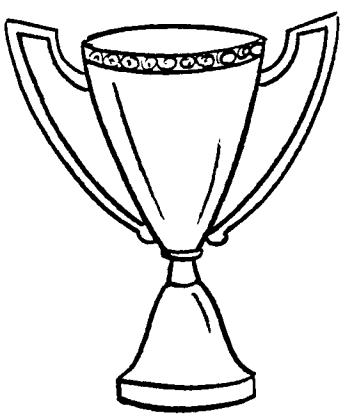
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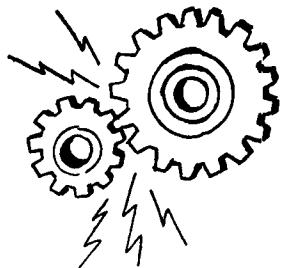
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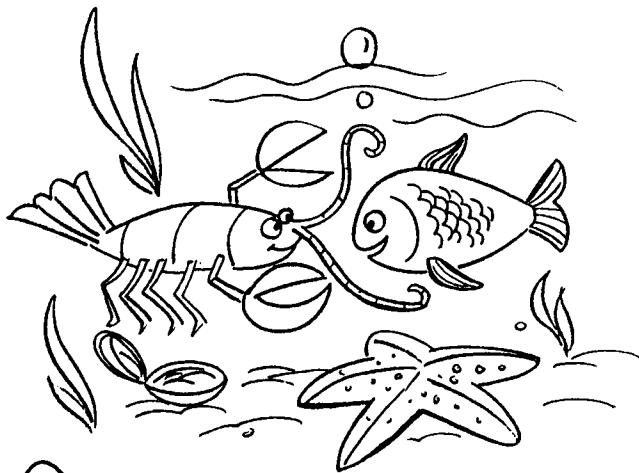
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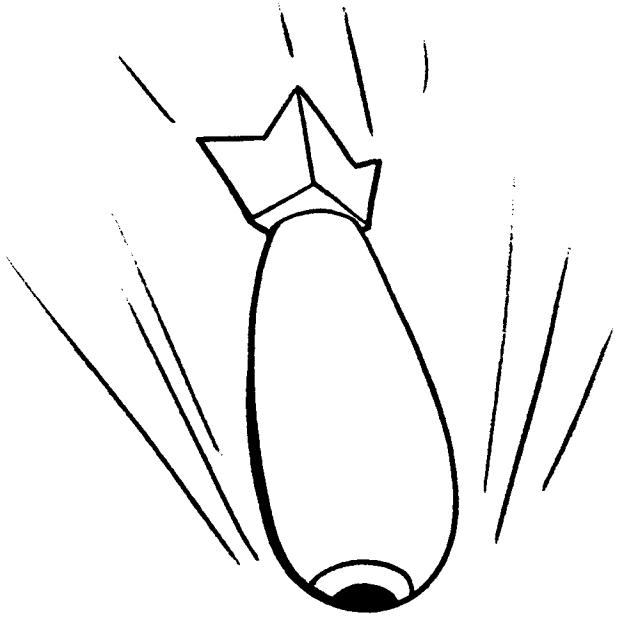
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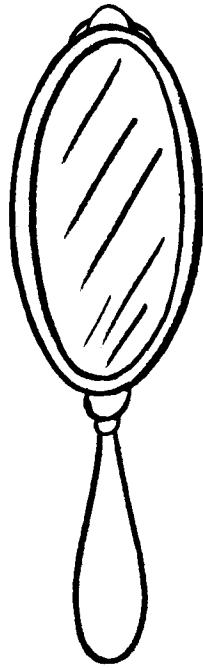
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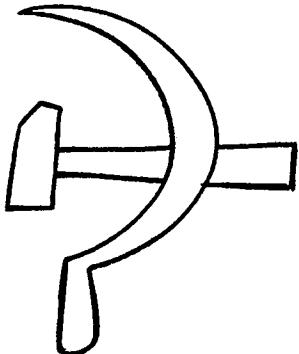
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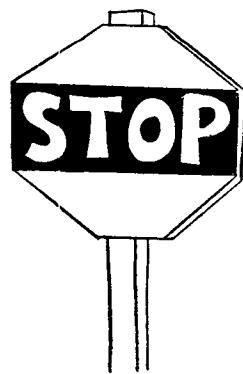
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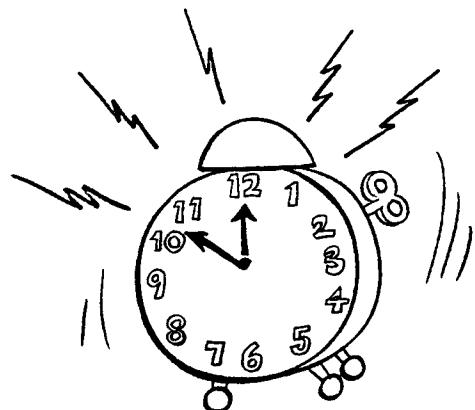
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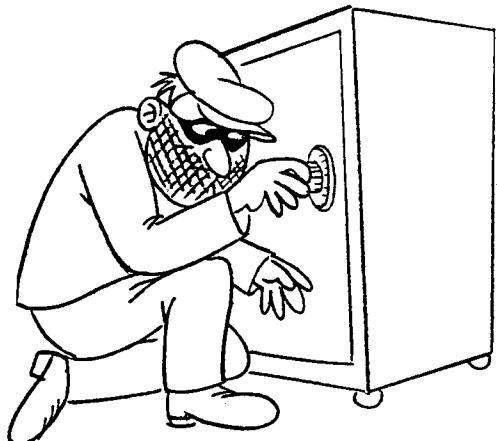
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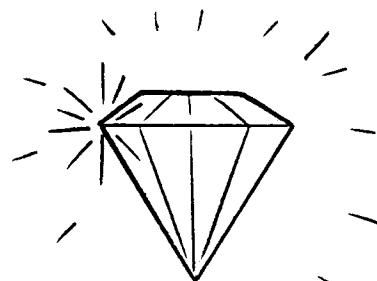
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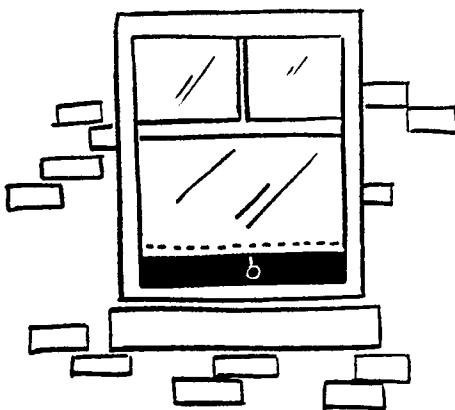


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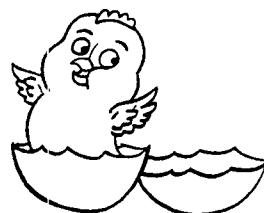


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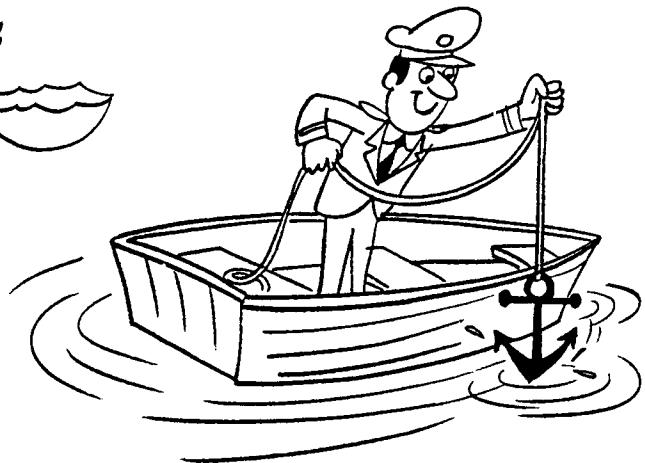
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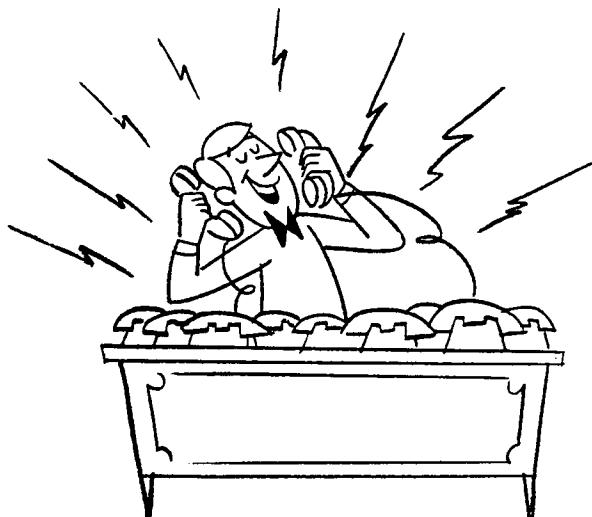
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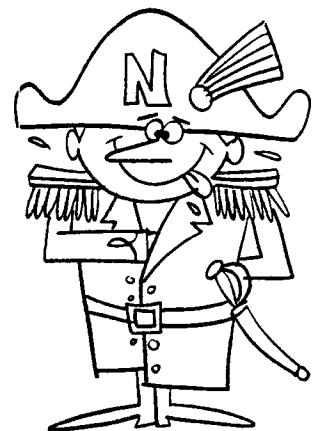
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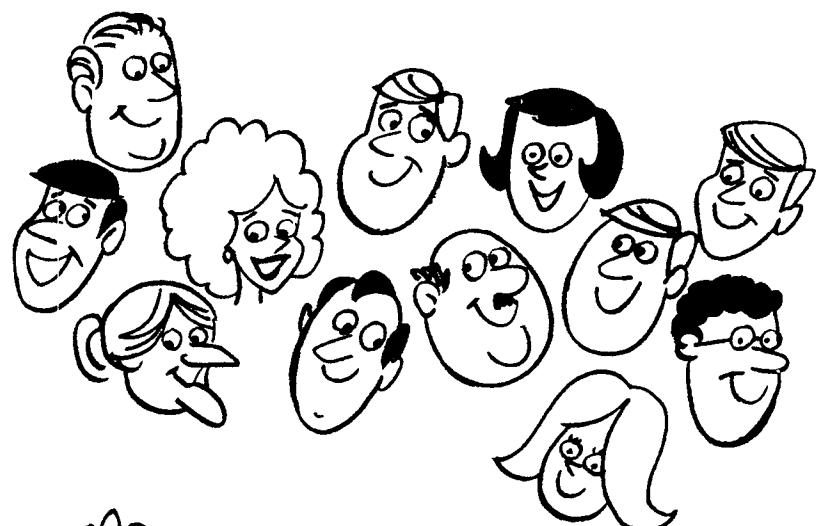
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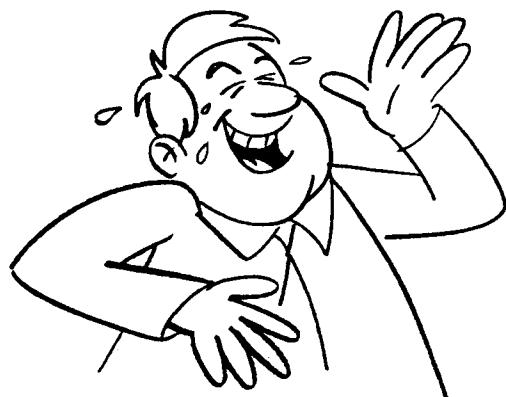
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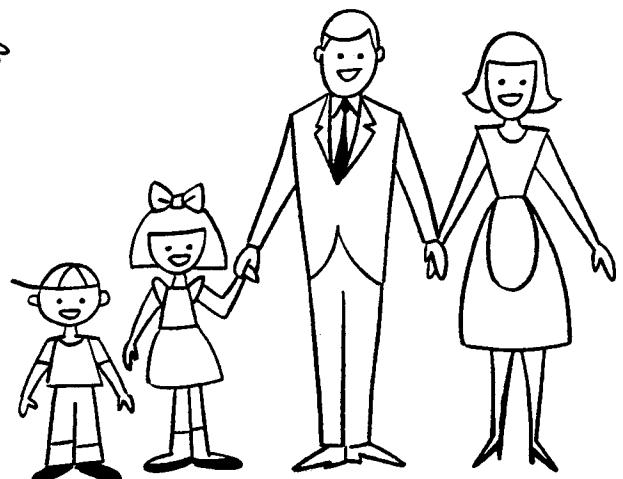


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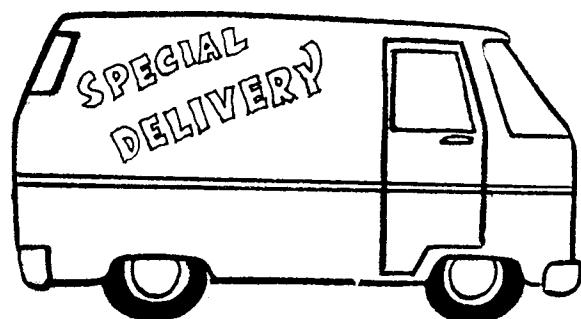
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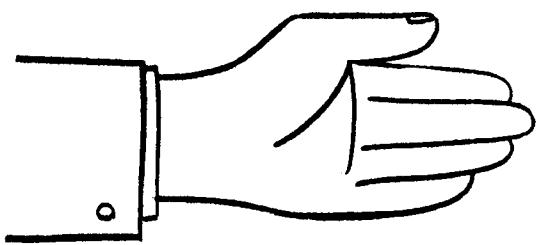
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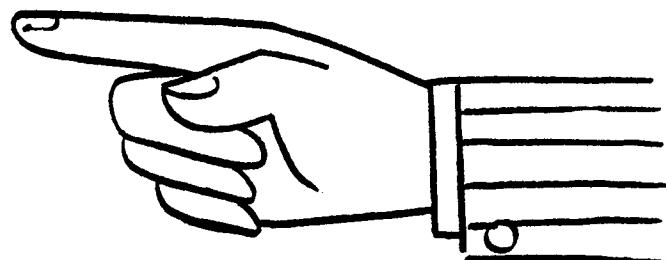
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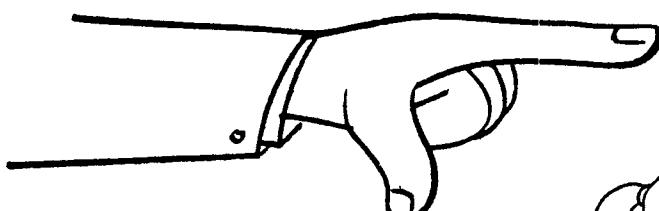


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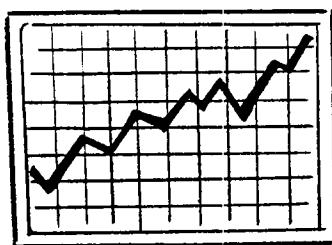
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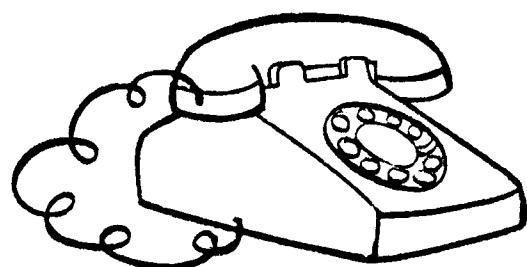


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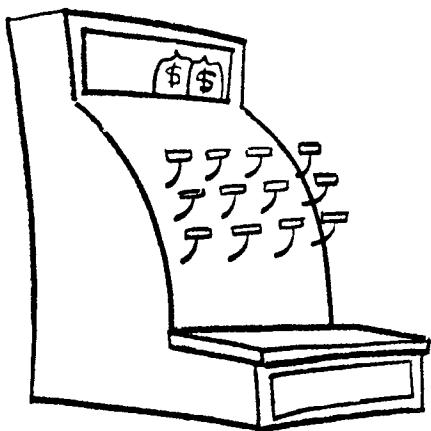
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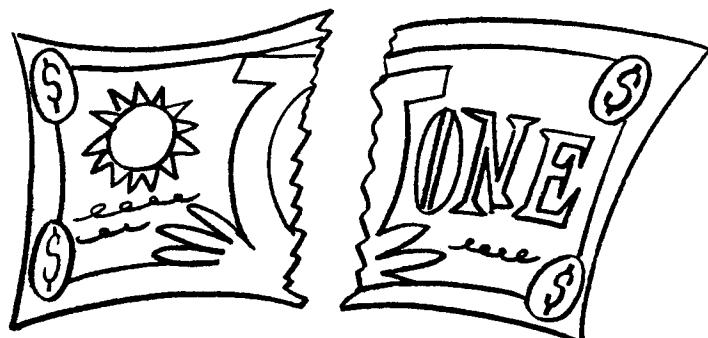
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Section II

Supplies and Equipment

If you are a practicing commercial artist of long standing, it's assumed that by now you have at your disposal a full assortment of the tools and materials generally associated with your craft. Most likely these far exceed the somewhat limited inventory of basic items suggested here for one about to set up for occasional or semi-professional work in the field.

A Working Surface

This could be any sturdy utility table you have on hand, or it may be an artist's drawing board or a professional drafting table. The choice will depend largely upon personal circumstances. In essence it boils down to two considerations: the nature of your work and how much you're willing to spend.

Utility table—If you decide that your needs are met with a simple home utility table, make sure it's square-edged, has a smooth work surface, and is of convenient work height.

Drawing board—Artists' drawing boards are usually made of smooth, kiln-dried, $\frac{3}{4}$ " pine, with accurately squared-off sides reinforced with hardwood strips. They come in a variety of sizes— $16" \times 21"$, $18" \times 24"$, $20" \times 26"$, and larger.

In use, the drawing board is propped up at the back end to tilt at a 30° to 35° angle, but this is largely a matter of personal preference. It is light in weight and can be placed on top of any work table or held in the lap, leaning against the edge of the table.

Drafting table—In the pages of any art supply catalog you'll see advertised a variety of drafting

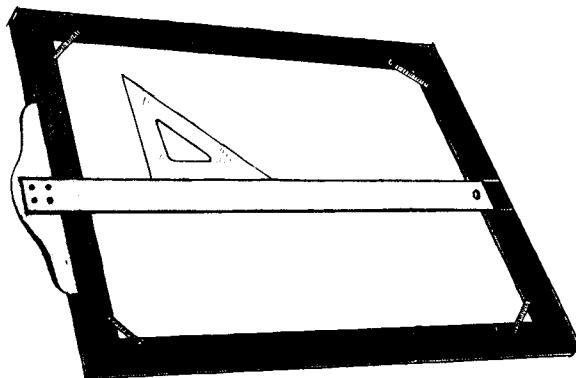


Fig. 1. Drawing board showing position of T-square, triangle, and paper.

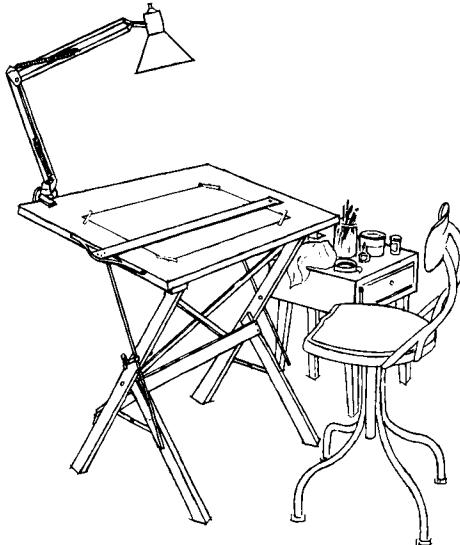


Fig. 2. Professional work setup showing drafting table, work stool, floating arm lamp, etc.

tables for studio use. All share this common feature: in addition to being carefully squared-up on four sides, the top can be tilted to any angle desired, or, if need be, raised or lowered to any height.

The simplest, least expensive, and perhaps most practical drafting table for home studio use, is the lightweight type constructed to fold flat, which can be stored away when not in use. If a professional drafting table is what you've decided on, you may also want to purchase a work stool, preferably one that can be adjusted in height.

Work Light

Unquestionably, the best artificial light source for any kind of artwork is a flexible light fixture known as a floating arm lamp. A light fixture of this kind can either be set on a table top or clamped down over the edge to leave a clear unobstructed working surface. Its unique floating arm construction makes it easy to direct the light source to any convenient height and angle. Many department and hardware stores as well as all art supply stores carry such lamps in stock. Get one—it is a sound investment.

T-square

This is an indispensable tool for anyone engaged in commercial art or drafting. The term *T-square* gets its name from the little crossbar affixed square to one end of the long blade, giving the tool the appearance of an elongated letter T. By butting the crossbar flush against the side of the drawing board, vertical and horizontal lines can be drawn with assurance of mechanical squareness.

The simplest type of T-square is made of wood. For all practical purposes it does the job well. It's the least expensive and therefore the choice of most art students. Some wood T-squares come with a plastic see-through strip lining the blade on both edges; others are constructed of stainless steel or polished aluminum. Regardless of the type you get, all are available in a variety of lengths ranging from 18" up. When purchasing a T-square, it's a good idea to select a size to accommodate the size of your drawing surface.

Rulers

Again, the simplest and least costly are those made of wood, some of which come with a thin metal edging to prevent their being nicked when they are used with a cutting tool. Professional artists show a preference for the all-metal kind with incised gradations on both sides. These are a bit more costly, but they can last a lifetime.

Triangles

Triangles have varied uses: They are serviceable for squaring up when employed in conjunction with a T-square; they provide mechanically accurate 30°, 45°, or 60° angles; they can also serve as a straightedge for working with pencil, marker, or pen. Although triangles can be obtained in an opaque metal form, see-through plastic models are more popular. Sizes are optional.

Cutting Tools

Razor blade—Perhaps the most expedient cutting tool is a razor blade. For studio work, it's more economical to get the single-edge industrial blade type sold in packs of 50 and 100. These are obtainable in nearly all hardware stores. Industrial blades are as sharp as the kind commonly used for shaving, but considerably less expensive. You'll find that a razor blade serves as an excellent tool for cutting paper, thin cardboard, acetate, and the like. In actual practice, it's used several times and discarded at the first sign of dulling. When used with a special holder, you'll be able to get a better grip and press down harder.

Mat knife—A sturdier cutting tool than the razor blade, a mat knife comes in handy for cutting heavy cardboard. The blade of a mat knife is made of high-quality carbon steel. It's durable, keeps a good edge, and requires only occasional sharpening. Additional blades are available as replacements.

Scissors—While any type of scissors will do, the best kind for studio work are those with long blades and just the right amount of tension. You may prefer the lightweight kind which some people find easier to manipulate.

Drafting Instruments

Professional artists and draftsmen often include among their tools and equipment, elaborate sets of drafting instruments consisting of different types of ruling pens, compasses, dividers, and related paraphernalia. Of these, all you'll require—at least at the outset—are the following:

Ruling pen—This is an instrument for ruling mechanically perfect lines in ink or paint. Basically, a ruling pen consists of a wooden or plastic handle in which two finely pointed metal prongs are held in position in relation to each other by means of a set screw. At the turn of the screw, the prongs move closer together or further apart, as the case may be; the space between the prongs determines the thickness of the line. In use, after adjusting the ruling pen to the desired thickness of the line and filling the space between the prongs with a drop of ink or paint, the pen is guided along a ruler or other straightedge.

It's sound advice to get a ruling pen of professional quality. It will make your work so much easier, especially for ruling graphs and borders as well as for doing reproduction lettering and other related work.

Compasses—Of the many styles to choose from, you may consider getting a combination type compass. With separate attachments, this instrument can not only draw circles in pencil, ink, or paint, but function as a pair of dividers as well. For oversized circles, an extension "beam" compass will come in handy. This, too, comes with attachments for pencil, ink, and small cutting blade.

This about completes the list of the basic equipment needed for most practical art projects. The items mentioned here are for the most part durable, and with proper care, hardly ever require replacement.

Now, let's review some of the more expendable tools and supplies—pencils, erasers, pens, markers, brushes, inks and paints, paper and board, and assorted items.

Drawing Pencils

Erroneously referred to as a "lead" pencil, the average drawing pencil is composed of a core of graphite within a wood casing. Actually there is no lead in a drawing pencil or in any sort of writing pencil. The thickness and the composi-

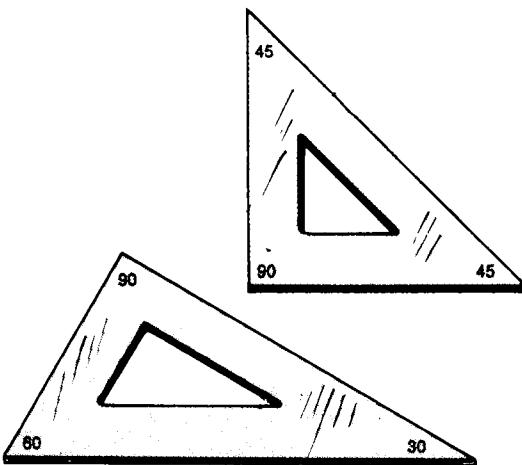


Fig. 3. Triangles.



Fig. 4. Ruling pen.

tion of the graphite core determine the width and density of the line.

The degree of hardness or softness of all drawing pencils is inscribed on the casing. The "H" series is hard, the "B" series soft. Just a limited number of pencils is all you really require. This might include a 2H (medium hard), a 2B (medium soft), and perhaps an HB for general sketching and layout. You'll work best with a properly sharpened pencil and so it's helpful to have a sharpener on hand, as well as a small sandpaper block or nailfile to keep the point just the way you want it.

Erasers

There are several types, each serving a distinct purpose. For general erasing, the most popular is *art gum*, sometimes referred to as soap eraser. This is a spongy non-abrasive composition effective for erasing pencil lines and grease marks. It crumbles as it erases without marring the drawing surface. The *kneaded* eraser, a pliable material with the look and feel of putty, has the distinct advantage in that it cleans the drawing surface without leaving any evidence of crumbs or other residual matter. The *pick-up* eraser, a hard crepe-like square of rubber, is used exclusively for picking up particles of dried rubber cement.

Pens

Lettering pens—There are quite a number of steel pens of varied sizes made for lettering. The Speedball® series is among the better known of these. These pens (or their equivalent bearing other trade names) are designed primarily for single stroke lettering. They are dip-in-ink pens, made for use with a penholder.

Crowquill pens—These, too, are dip-in-ink pens. Reserved mostly for delicate pen-and-ink sketching, crowquill pens are equally good for minuscule lettering, scrolls, and the like. The natural flexibility of the nib responds to the slightest modulation in pressure to produce subtle variations in thickness of line.

Fountain pens—The salient feature of these pens is the inner sack or other device which serves as a reservoir for ink, obviating the need for dipping. Nib sizes and styles are interchangeable. Square-nib pens are ideal for calligraphic lettering.

A special kind of technical fountain pen much

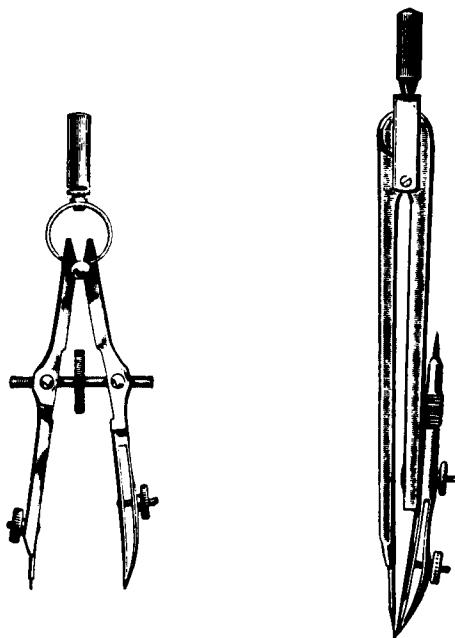


Fig. 5. (Left) Ink compass; (right) Combination compass.

in demand today is typified by the Rapidograph pen. This pen (and others similar to it) is meant specifically for ruling single-thick lines, fine lettering, pen-and-ink illustrations, and cartoons. Points for these pens are readily interchangeable and come in an array of different thicknesses to produce even-thickness lines from hairline to broad.

All technical fountain pens require scrupulous care in handling and maintenance. If not cleaned periodically, they are apt to clog, making subsequent cleaning all the more difficult.

Markers

Marking pens, both the felt-tipped kind and those made with plastic nibs, are available nowadays in so many different sizes and shapes, that it would be difficult to list or classify them all. Suffice it to say, markers have become an indispensable art tool for color "comps," lettering and illustrations, and general artwork. The chief feature of markers lies in the fact that the ink dries almost instantly upon contact with the drawing surface. What's more, they are smudge-proof.

Markers come in a fantastic number of different colors, shades and tints, including fluorescents. Unlike poster colors, markers (with the exception of black) are transparent. They are available nearly everywhere—art supply stores, stationery stores, supermarkets, etc.

Brushes

Don't stock up on brushes. Professional artists' brushes are expensive. Get a few and get the best. It's said that the brush is the silent working partner of the artist. A good quality brush will make your job easier and faster and yield better results.

For most routine lettering and poster work, a round-ferruled showcard brush is suggested. A brush of this kind has bristles of equal length, cut

square at the end. For fine script lettering, scrolls and the like, as well as for cartoons and illustrations, a pointed brush is generally preferred. Artists' brushes come in many sizes varying from very fine to broad. For extra broad strokes such as may be called for painting in backgrounds, there are flat-ferruled, square-ended brushes, or "fill-in" brushes as they are sometimes called. These brushes can also be used for doing jumbo-sized one-stroke lettering where speed and legibility are more important than refinements.

Inks and Paints

India ink, a generic name for a high-quality black drawing ink is the preferred medium for black-and-white rendering of artwork prepared for photographic reproduction. It has excellent opacity and because of its proper flow qualities, works equally well with pen or brush. Though water-soluble when wet, India ink becomes waterproof when dry.

Also available are colored inks which are non-waterproof and transparent. Lately, however, these have been largely replaced by markers.

Poster paints are mostly used for poster and display work. They come in a number of standard colors put up in jars of various sizes, from two ounces up. Generically classified as water-based tempera paints, they are readily intermixable and capable of producing an unlimited number of different hues and shades.

A little advice: Start your inventory of paints with the primary colors (red, yellow, and blue), plus black and white, and add other colors as needed.

Pastels

Pastels are finely ground richly pigmented chalks put up in stick and pencil form. There are dozens of colors to choose from.

With the expanded technical advances of markers, the popularity of pastels as a commer-

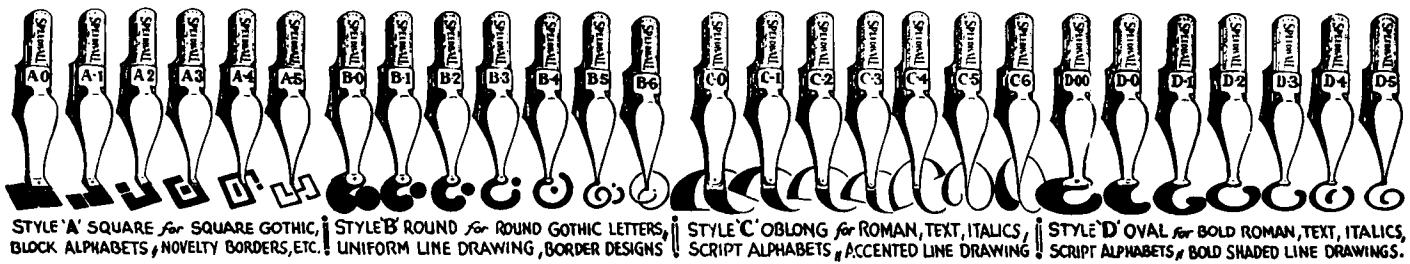


Fig. 6. Speedball® lettering pen series.

cial art medium has declined somewhat, and they are now reserved mostly for portraits and quick color sketching. Pastels produce a pleasing velvety effect unlike any other color medium but require a fixative spray or a glass or acetate sheet to keep colors from smudging.

Rubber Cement

This is the basic adhesive used to prepare paste-ups. Rubber cement laminates the mount to the background without loss of time in drying and requires no weighting down. It sticks on contact. It is packaged in jars and cans of various sizes. For limited use, a pint will last a long time.

Some caution must be exercised in handling studio-type rubber cement since it possesses a high degree of volatility and is potentially combustible when placed or stored near a heat source. There is a non-combustible type specifically formulated for home and classroom use available.

Masking Tapes

Not too long ago thumbtacks and pushpins were standard items for holding down paper or cardboard. Today, self-adhesive masking tape, both the opaque and see-through kinds, have, to a great extent, replaced tacks and pins. Tapes are available in plastic form as well as in paper and in a wide assortment of colors and widths. Colored tapes are reserved mainly for charts, bar graphs, and decorative borders.

Cardboard and Paper Stock

It would be quite impractical to advise you on the exact type or quantity of paper and cardboard stock to include in your stockpile. What you get, and how much, will obviously depend on the nature of your work and how much you use for each project. This consideration applies, of course, to all other expendable supplies such as inks, paints, markers, etc.

A listing and brief description of some of the more popular cardboard and paper stock should prove helpful to acquaint you with what is available.

Illustration board—This is the choice stock for the preparation of finished artwork as well as a mounting board for paste-ups and mechanicals for photographic reproduction. It permits easy

erasures during the initial and subsequent stages of layout work and provides an exceptionally good surface for varied art media. Illustration board comes in white only and in two standard thicknesses: single thick (1/16") and double thick (1/8"). For most routine purposes single thick is adequate. There is also a choice of three types of work surfaces: *hot pressed* which has a smooth surface; *cold pressed* which has a vellum-like, slightly grainy surface; and *rough* which has a distinct textural feel to it. For pen and ink, hot pressed is the prime choice, while for brush, pastel, and pencil work, the cold pressed or rough surface yields the best results. Standard sizes are 15" × 20", 20" × 30", and 30" × 40".

Bristol board—This stock possesses essentially the same desirable surface qualities as illustration board but is lighter in weight and more restricted in size. The thickness of Bristol board is measured by ply—the ply signifying the number of layers of paper laminated together to build up the prescribed thickness. Thus there is 1 ply, 2 ply, 3 ply, etc; the higher the ply, the heavier the board. Bristol board can be used on either side, both being equally compatible to a variety of art media.

Showcard board—Standard sizes of showcard board are 28" × 44" and 40" × 60". Considerably less expensive than illustration board, showcard board, as the name implies, is designed primarily for showcard work. It also lends itself to casual posters, bulletin announcements, price tickets, and the like. Showcard board is available in white as well as a generous selection of colors, including several fluorescents in addition to silver and gold. It also comes in single-thick and double-thick weights.

Mat board—This is reserved mainly for decorative mounting and matting of artwork and photos. Mat board possesses a visually pleasing surface which contrasts favorably with whatever it frames or when it's used as a mounting background. It comes in over 30 different colors in both textured and smooth surface finish.

Drawing paper—Put up in sheets, rolls, and in the form of layout pads, drawing paper is available in different weights and sizes. Good quality drawing paper is receptive to the various drawing and sketching media and permits repeated erasures.

Newsprint paper—This is a low-priced versatile paper used frequently for drawing classes, school art projects and outdoor sketching. Though specially suited to dry media (pencil, charcoal, pastel), it gives interesting results with inks or paints. It's sold in sheet and pad form.

Tracing paper—Used for general tracing purposes as well as in the development of layouts, tracing paper comes in a choice of sizes, weights, and varying degrees of transparency. It's common procedure in advertising to create the initial idea sketches and layouts on tracing paper first, before proceeding with the more finished version of the art.

In the sign field, a semi-transparent type of tracing paper (commercially referred to as banner or bond paper) is widely used for paper signs for store windows.

Colored paper and colorfilm sheets—Greater and greater use is now made of colored paper for layout work as well as for finished art. Colored paper comes in several standard sizes and in a prodigious number of different hues and shades

and finishes. From practical experience, it's been found that, in many instances, it is quicker to "design with paper"—that is, to cut papers into shapes and mount them in assembled form on a board—than it is to color in the design areas the conventional way with brush and paint.

The cut paper technique lends itself ideally to highly posterized treatments of illustrations and cartoons, graphics, packaging design and similar projects. Some papers are made with a pressure sensitive self-adhesive back to facilitate mounting the integral design components in position.

Also available is a wide assortment of color film sheets, both opaque and transparent, which are equally easy to shape, cut, and mount. Get a dealer catalog for sizes and color swatches of papers and films.

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abcdefghijklm nopqrstuvwxyz 1234567
890?!&\$¢%*;:;

A B C D E F G H I J K L m n o p q r s t u v w x y z
M1908CL/8pt.
S1908CL/8pt.

A B C D E F G H i j k l m n o p q r s
M1910CL/10pt.
S1910CL/10pt.

A B C D E F G h i j k l m n o p
M1912CL/12pt.
S1912CL/12pt.

A B C D E F g h i j k l m n
M1914CL/14pt.
S1914CL/14pt.

A B C D E F g h i j k l m
M1916CL/16pt.
S1916CL/16pt.

A B C D E F g h i j k l m
M1918CL/18pt.
S1918CL/18pt.

A B C D e f g h i j k
M1924CL/24pt.
S1924CL/24pt.

A B C d e f g
M1936CL/36pt.
S1936CL/36pt.

A B C d e f
M1942CL/42pt.
S1942CL/42pt.

A B C D
M1948C/48pt.
S1948C/48pt.

a b c d e f
M1948L/48pt.
S1948L/48pt.

A B C D

M1960C/60pt.
S1960C/60pt.

a b c d e

M1960L/60pt.
S1960L/60pt.

A B C

M1972C/72pt. (2 sheets required)
S1972C/72pt. (2 sheets required)

a b c d

M1972L/72pt. (2 sheets required)
S1972L/72pt. (2 sheets required)

A B

M1996C/96pt. (2 sheets required)
S1996C/96pt. (2 sheets required)

a b c

M1996L/96pt. (2 sheets required)
S1996L/96pt. (2 sheets required)

A B

M19120C/120pt. (2 sheets required)
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a b

M19120L/120pt. (2 sheets required)
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A

M19180C/180pt. (3 sheets required)
S19180C/180pt. (3 sheets required)

a

M19180L/180pt. (3 sheets required)
S19180L/180pt. (3 sheets required)

SIMPLEX BOLD

Fig. 7. A page in a typical dealer catalog showing a transfer rub-on alphabet in various sizes. (Courtesy of Chartpak.)

2

About Lettering and Typography

There is a difference between lettering and typography. *Lettering* refers to original alphabets rendered by hand by an artist using pen, brush, marker, or similar tool; *typography*, on the other hand, refers to type face alphabets printed by letterpress or from photocomposition fonts.

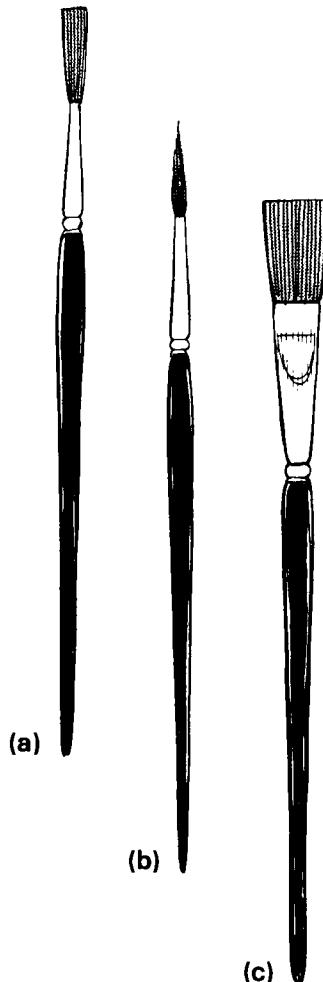
All alphabet styles, whether lettered by hand or produced with type, can be conveniently classified into the following families of alphabets.

Roman—Alphabets in this classification are characterized by a noticeable variation in the relative width of strokes that comprise the letter form. Some strokes are thick, some thin. In most instances, stroke endings show little finishing spurs called *serifs*. Many books are printed in some form of Roman alphabet.

Gothic—Alphabets in this classification are composed of strokes of more or less uniform thickness, usually “sans-serif” (without serif). Gothic alphabets are likely to be simple and bold in structure. They have a high degree of legibility which accounts for their being so adaptable to posters and billboard signs as well as for captions and newspaper headlines.

Text—Alphabets in this classification have a rather bold, yet ornate look about them, frequently combining massive strokes with fine hairline embellishments. Text alphabets are appropriate for ecclesiastical documents, proclamations, diplomas, and certificates. Old English is a good example of a text alphabet.

Script—Alphabets in this classification are characterized by free-flowing flourishing strokes with each letter in a word linked together and slanted forward as in formal handwriting. Script adds a



**Fig. 8. (a) Square-edge lettering brush;
(b) Pointed watercolor brush;
(c) Single stroke fill-in brush.**

pleasing personal touch to a body of copy. Most scripts are of thick-and-thin letter structure.

Italic—Alphabets in this classification may be one thickness or thick-and-thin, with or without serifs. Unlike script, italic letters comprising words are not connected by links. Each letter is separate but is made to lean forward at a fixed angle.

Italics are mostly employed to direct particular attention to a word or phrase. Nearly all straight up-and-down alphabets can be made to take on an italic form by slanting the letters forward at a fixed angle.

Calligraphy—The word calligraphy means beautiful writing. There is no set formula to put up as a model for anyone to slavishly follow. At its best, the art of calligraphy is based on personal esthetic improvisation. A broad-nibbed pen is the prime tool of the calligrapher.

Like text alphabets (to which it bears some resemblance), a calligraphic style is suitable for diplomas and certificates, cultural announcements, poetry, and the like. Calligraphy is currently enjoying an impressive revival as a form of handwritten correspondence.

Hand Lettering

Hand lettering is the basis for the creation of all alphabet styles that have become standardized throughout the years. It is an art form that requires (in addition to some natural dexterity) considerable practice to become really good at. It's fun to watch a master lettering artist at work—it seems so easy! You too can acquire a degree of proficiency in lettering through professional guidance or diligent self instruction. If you are learning how to letter on your own, there are a number of books that can be of particular help to you—among them *The ABC of Lettering* by J.I. Biegeleisen (published by Harper & Row) which is devoted exclusively to developing skill in this art form.

Transfer Rub-on Alphabets

If hand lettering isn't your cup of tea or you are unable to devote the necessary time to it, you can avail yourself of a wide selection of beautifully designed alphabets as well as standard type faces which come in the form of easy-to-apply transfer sheets. There are virtually hundreds of styles in a graduated number of sizes to select from.

Fig. 9.

ROMAN

Fig. 10.

GOTHIC

Fig. 11.

Text

Fig. 12.

Script

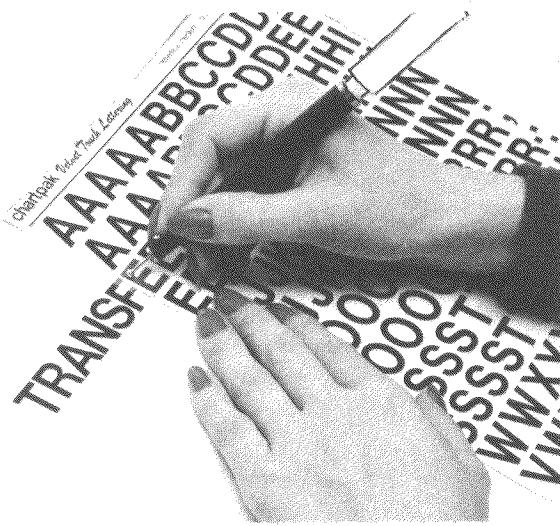
Fig. 13.

ITALIC

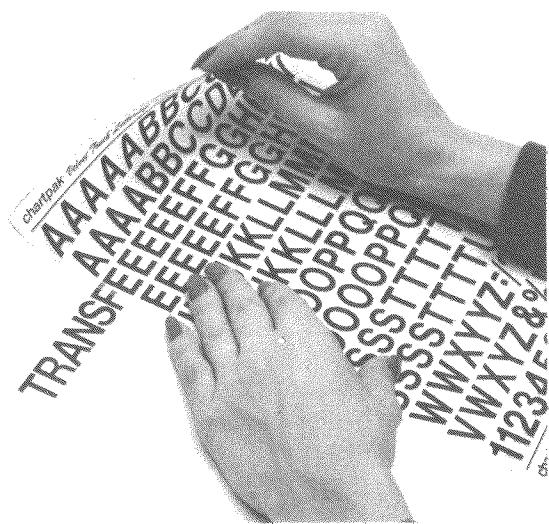
Fig. 14.

Calligraphy

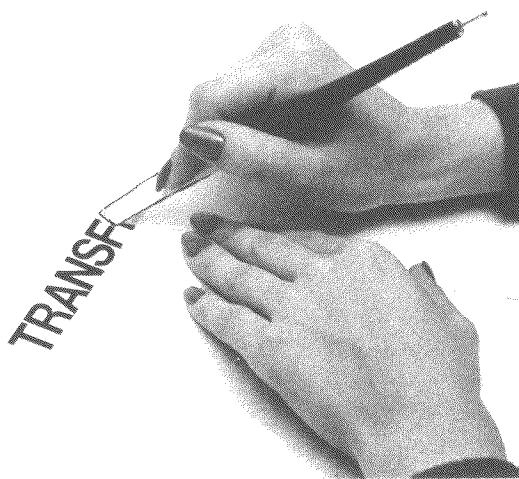
The procedure for applying transfer alphabets is simple, as illustrated and described on this page. With proper alignment and spacing, gratifying results are achievable with comparatively little practice. Transfer alphabets are available in black or a limited number of colors. In addition to the basic line of transfer rub-on alphabets, there is also a wide assortment of border designs, pictorial symbols, arrows, stars, and decorative dots as well as shading and texture sheets. Ask your art supply dealer for a copy of one of the transfer sheet catalogs. They are usually free to customers.



1.



2.



3.

Fig. 15. Applying transfer rub-on alphabets.

1. Position the selected letter on the layout.
 2. Rub the letter down slightly with the aid of a ballpoint pen or plastic burnisher.
 3. Remove sheet by carefully lifting from corner. For maximum adhesion, place backing sheet over letter and burnish down once more.
- (Photos courtesy of Chartpak.)

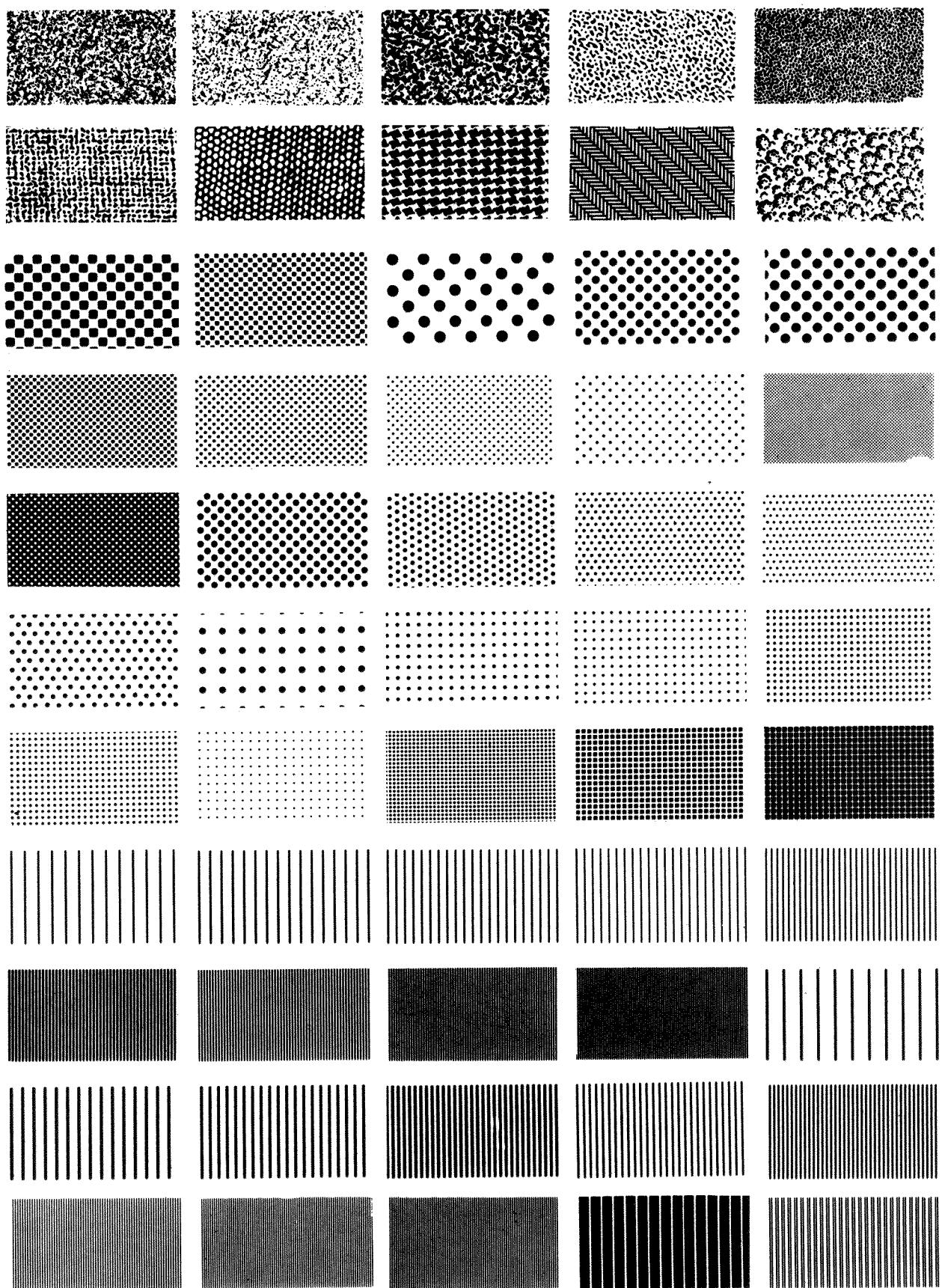


Fig. 16. A sampling of the great variety of textural and shading sheets available in transfer rub-on form.



Fig. 17. A sampling of designed letter forms to pictorially convey special effects.

MERRILY WE ROW ALONG o'er Yellow Sea...

QUEEN of EGYPT in Shakespeare

visit India spring, fall, winter, summer

Mosques Sultans Harems Katagh

Aben Adam May His Tribe Increase

HEBREW TRANSLATED FAST

Direct Flights to Istanbul Turkey

free yourself for world travel

CHINESE CHINESE

you'll taste the south Pacific

Ja, Photo Lettering Can Speak Mit German

ΘΛΥΩΡΙΔ, ΤΗΣ ΗΘΩΣ ΘΕ ΓΡΕΣΚ

ФИЕ ОЦДЯТ ФЕ ЯЦССФДИ ВФДКД

Fig. 18. Imitation foreign language alphabets created by Photo-Lettering Inc., New York.

3

Layout and Composition

There are a number of cardinal principles of layout which apply with equal validity to any form of graphic design, be it a poster, journal cover, newspaper or magazine advertisement, leaflet, etc.

Simplicity—To be effective, a layout should be uncluttered. Generally speaking, the fewer elements into which a given space is divided, the more pleasing to the eye. A good layout is never overly busy; it does not include an array of different sizes and styles of lettering, competing illustrative elements, or an overabundance of decorative embellishments.

The copy (wording) is easiest to read and understand when it's logically separated into thought groups surrounded by white space. "Paper is part of the picture." Featured copy by its relative size and position should be given prominence over incidental copy. Only when that which is comparatively unimportant is subdued, does the important matter stand out by contrast. If all the lettering and illustrated elements are jumbo size, none is outstanding. It's like the saying, "When everybody shouts, nobody is heard."

Balance—It may be said that there are two types of balance: formal and informal. In a layout based on *formal* balance, an imaginary vertical

line running through the center would divide the composition so that one half presents a mirror image of the other. Formal balance suggests repose, tranquility, and freedom from tension. A layout based on formal balance is appropriate for such things as social invitations, cultural events, bank advertisements, etc. If a more exciting impression is to be conveyed, for example, an ad for a circus or a barn dance, a layout based on *informal* balance would suggest the proper mood and be the more logical choice. It should not be inferred that the design elements in informal balance are necessarily off balance or lopsided. It means, rather, that a feeling of stability is conveyed by placing selected elements of the design at one part of the layout, esthetically counterbalanced by related elements in another part.

Unity—Unity is the relationship or kinship between the various elements of a composition. The several elements that comprise the layout must hold together. This can be achieved by grouping the wording into distinct areas or units, and creating a pleasing relationship between them as components of the same general design. Sometimes an interesting border will help to convey a feeling of unity to a composition by corralling the diverse elements.

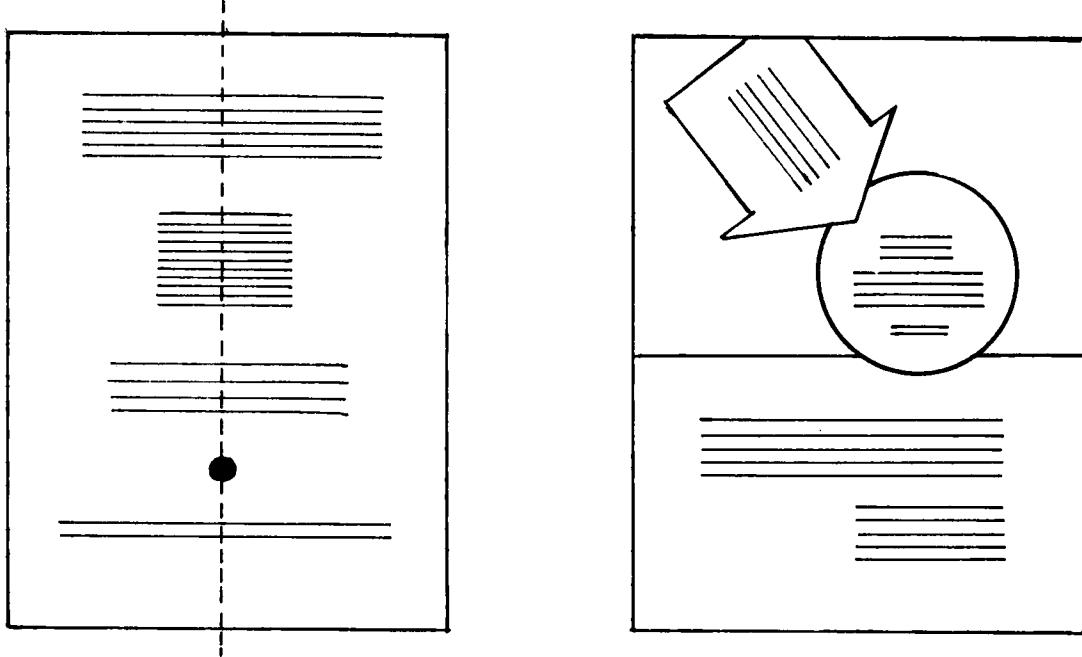


Fig. 19. (Left) Layout based on formal balance; (right) Layout based on informal balance.

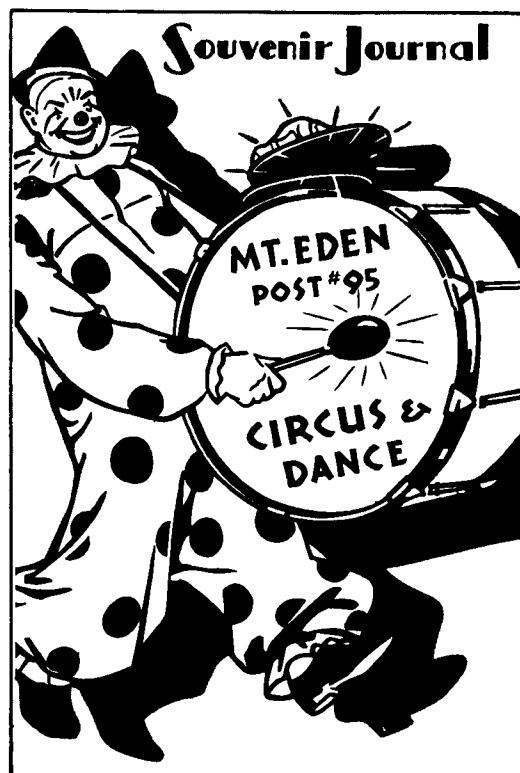


Fig. 20. Effective use of cartoon illustration on a souvenir journal.



Fig. 21. A simple hand-lettered leaflet made more effective by the use of a cartoon illustration placed in a strategic position.

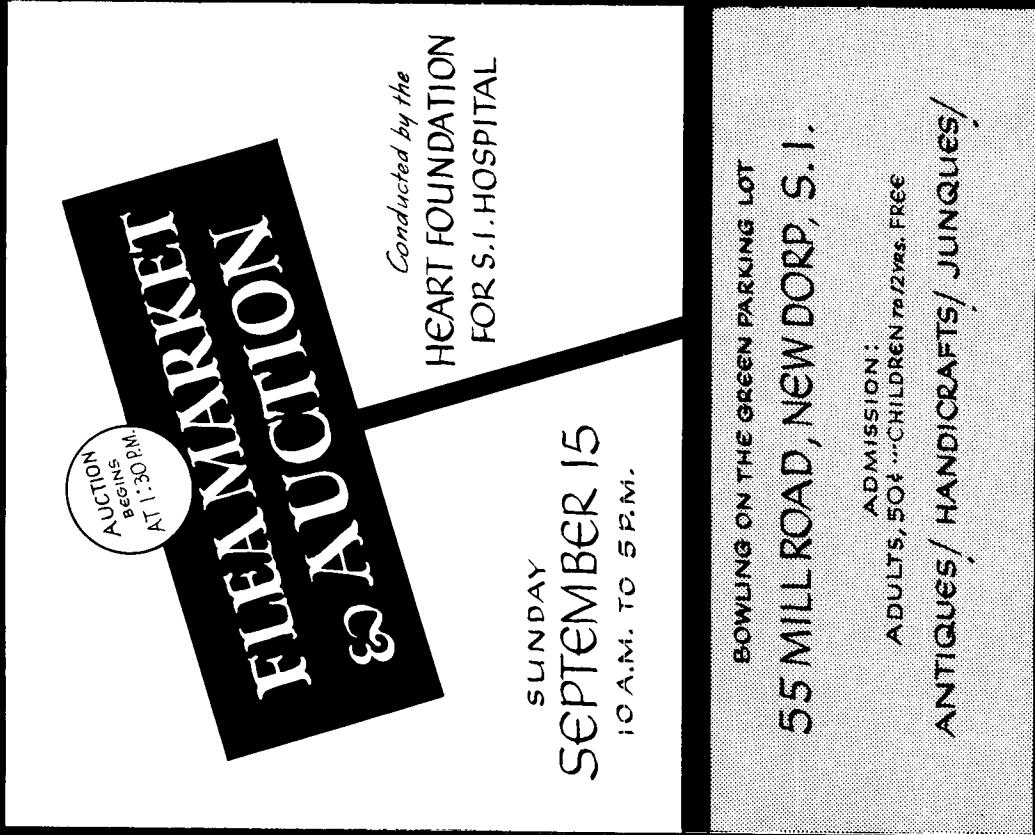


Fig. 22. Examples of two poster layouts identical in size and number of words. The one on the left is difficult to read because of its multiple letter styles, lack of grouping, and unnecessary doodads. The one on the right combines the advantages of simplicity and good division of space with plenty of white area around it.

4

Notes on Commercial Printing Processes

Photo-offset Reproduction

If you need photographic reproductions in a limited quantity, even as low as 25 to 50 copies, photo-offset would most likely be one of the graphic art processes you would consider. In some cases, if the artwork consists of line work only, the Xerox or similar photocopying process would be a feasible alternative.

Photo-offset is a comparatively inexpensive means of quality reproduction and is not at all limited to short run printing. Quite the contrary. This printing process is employed extensively for mass edition runs. It ranks as one of the more popular printing processes for magazines, brochures, leaflets, labels, etc. This entire book—illustrations and text as well—was printed by photo-offset.

In photo-offset printing, the design image to be reproduced is photographically transferred to a flexible printing plate which is then wrapped around a metal cylinder. In synchronized action, a roller picks up the printing ink from the ink fountain and distributes it to another roller, which in turn applies it to the printing plate. The wet image is transferred onto a rubber blanket roller, which in turn comes in contact with the paper. In effect, an offset print is a print from a print. The process is of course much more sophisticated than is alluded to in this brief description, but it's sufficient to suggest the basic principle of offset printing.

Letterpress

This involves printing from a metal plate

wherein the design image appears in relief *above* the surface of the plate. A print results when the inked surface is made to come in contact with the paper. Like photo-offset, letterpress is a fully-automated printing process and capable of high speed production. Letterpress (or relief printing to which general category it belongs) has traditionally been the chief mode of commercial printing but as time goes on it's gradually being superceded by more advanced reproduction methods.

In a sense, a common rubber stamp or an artist's handcut woodblock where the design is raised above the surface exemplifies the principle of letterpress.

Gravure

Commercial gravure is a highly technical process where the design image is photographically engraved or etched *below* the surface of a metal printing plate. Unlike a handmade engraving or etching, gravure in its commercial application calls for a vast array of specialized equipment and expertise beyond the reach of the individual artist or printmaker.

The design image on a gravure plate comes to life when ink lodged beneath the surface of the plate in varying depths or "cells," is drawn up as paper and plate come in contact under pressure. The deeper the cell is, the more ink it holds and the darker the particular area of the image. A metal gravure plate for reproducing a small photograph may contain thousands of such cells, all contributing in relative degrees to the light and

dark areas on the final print. Fine art prints, some expensive books, and brochures, as well as some of the better Sunday newspaper supplements are often reproduced by gravure.

Silkscreen Printing

This printing process is unique in that it can be used not only for printing on paper or other flexible stock (as is the case with other printing processes) but that it is equally applicable for printing on rigid materials such as cardboard, metal, wood, or glass. It is easily the most versatile of all printing processes in use today. Modern silkscreen printing is essentially a sophis-

ticated modification of the early stencil method —a mode of printing by which paint or other color medium is pushed through the openings of a stencil. Originally developed as a poster printing process by sign painters, its applications have been widely extended to include such end products as textiles, wallpaper, rugs, glass and dinnerware, among other things. Since stencils are relatively inexpensive, the process has proven itself to be practical even for limited edition color reproduction. It has remained, to some extent, a manually-operated printing process requiring comparatively simple equipment, and for this reason has been avidly adopted by artists who wish to reproduce their own paintings in full color.

5

Methods of Copying and Transferring Artwork

Any artwork can be copied actual size or made proportionally larger or smaller as required by one of the following methods.

The Tracing Method

When the art to be traced is on paper or similar thin stock:

1. With several strips of tape, fasten the art to the illustration board (or other surface) to which it is to be transferred.
2. Slip a sheet of carbon paper under the art, carbon side facing *down*.
3. With a well-sharpened pencil or a ballpoint pen, trace all lines on the art, bearing down just enough to produce a good carbon impression.
4. Carefully inspect the tracing to be sure all lines on the art are completely gone over before you remove the carbon and lift the setup out of position.
5. Lightly wipe the traced areas on the illustration board to remove any excess carbon or smudge marks. Correct or refine any part of the tracing, if needed.
6. Ink or paint in the tracing on the illustration board.

When the art to be traced is on cardboard or other heavyweight stock:

1. Tape a sheet of transparent tracing paper over the art.
2. With pencil or ballpoint pen, meticulously trace all lines of the art as they are visible through the tracing paper. In tracing, apply just

enough pressure on the pencil to produce clear, clean lines without digging into the art underneath.

3. Remove the tracing and using it in the manner of a "duplicate original," transfer it to the illustration board with carbon paper as previously described.
4. As before, carefully check the traced art for accuracy and completeness, and ink or paint it in.

The Grid Method

This offers a practical approach for proportionally duplicating an original piece of art either in actual size, or reduced or enlarged, as needed. It is simple to do and is a method employed not merely by amateurs and students but by many professionals as well. In essence, the grid method calls for working with two graph-like grids—an *art* grid and a *copy* grid, and visually duplicating the contour lines of the art of one onto the other. Here's the procedure in greater detail:

1. To keep the original art from being marred, tape a sheet of tracing paper over it. Then with the aid of a T-square, rule in a series of equally-spaced horizontal and vertical lines to form a grid of uniform-size squares.
2. In light pencil, rule in a similar grid on the illustration board or other surface where the duplicate is to appear. The size of this grid (the *copy* grid) may be made larger or smaller depending on whether the art is to be enlarged or reduced. For example: To double the size of the

art you wish to enlarge, double the size of the copy grid; to triple the size of the art, triple the size of the copy grid. Conversely, to reduce the size of the art, proportionally reduce the size of the copy grid.

3. On each grid, label one set of lines alphabetically, the other numerically.

4. Guided by the key letters and numbers, square by square visually copy every detail of the picture image on the art grid onto the corresponding squares of the copy grid.

5. Paint or ink in the duplicated art.

6. Erase the grid lines on the illustration board.

The Projection Method

For true-to-life enlargements in black-and-white or full color, commercial studios employ various projection devices, one of the most versatile being an *opaque projector*. This somewhat resembles a slide projector, but where the slide projector works with transparencies, the opaque projector can project directly from opaque material such as board and paper, or actual three-dimensional objects.

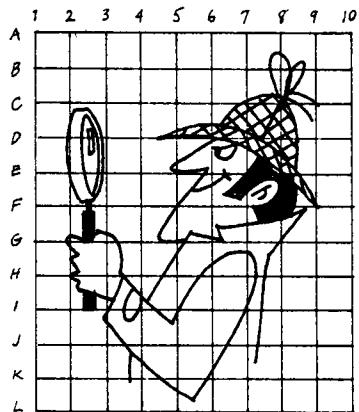
Opaque projectors come in various types and sizes, but all operate in essentially the same way. The art to be duplicated is placed in a fixed position within the unit, and upon adjusting the lens to sharp focus, the image is projected onto a drawing surface placed upright on a wall in the manner of a screen. As in any projection apparatus, the further it is stepped back, the larger the resulting image. The lines of the original art in its projected form are easily followed and drawn with pencil or charcoal while the projector is in operation.

On a commercial scale, opaque projectors can run into high costs, however, the smaller versions for home studio use are inexpensive enough for you to want to consider.

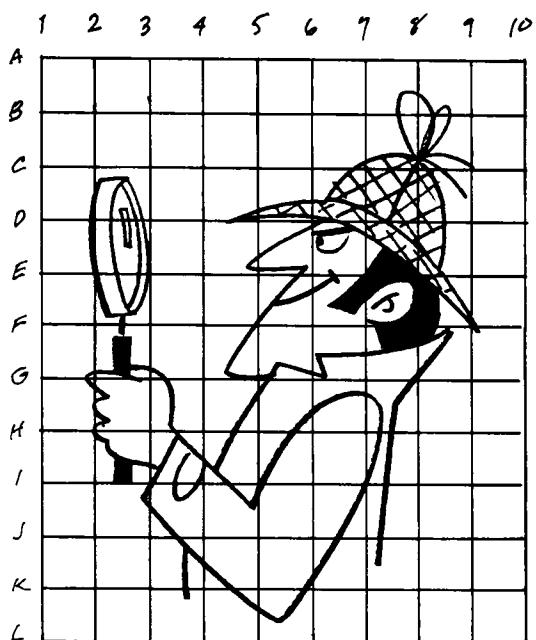
Photostats

Though generally speaking, photostats ("stats," for short) do not yield the ultimate in high fidelity resolution traditionally associated with fine camera photography, they serve the purpose adequately for most routine jobs, especially when the art to be copied consists of "line" work such as lettering, pen-and-ink drawings, etc.

Stats are used predominately for reproduction work in black-and-white rather than full color. In



(a) original size



(b) the enlargement

Fig. 23. Copying the lines of a cartoon illustration by the grid method.

most instances, they are considerably cheaper than conventional camera reproduction and much faster, too.

In addition to being infinitely more accurate than hand-drawn duplicates could ever hope to be, stats have another built-in advantage. They, like regular photographic reproductions, can be had not only in any desired size, but in *positive* or *negative* form as well. A "positive" is a photocopy where what is black in the art comes out black in the copy; what is white comes out white. In a "negative," the black and white relationship is reversed, that is, what is black on the art comes out white in the copy, and conversely, what is white in the art comes out black in the copy.

When ordering stats or regular photographic reproductions, indicate within the margin of the art the size of the desired reproduction, marking up only *one* of the dimensions. In reproduced form, the other dimension will automatically be proportional. Also remember to specify whether

the copy you want is to be a positive or a negative.

Instant Photocopy Reproduction

Commercial photocopy "centers" everywhere employ Xerox or similar photocopying equipment, making it feasible to get copies made on a while-you-wait basis. In addition, a growing number of libraries, banks, and even some of the larger supermarkets now have one or more self-service photocopy machines on hand for use by the general public. For a very nominal charge acceptable quality copies are possible, especially when the original is confined to line work. Some of the more modern photocopy machines can reproduce work in full color as well as in black-and-white, and do reductions in size if required.

Note: The illustrations in this book can be reproduced by this means, right from the book itself, without tearing out the pages, or mutilating them in any way.

6

Preparing Paste-Ups and Mechanicals

In the jargon of commercial art and advertising, the term *paste-up* refers to the finished project as well as to the procedure entailed in positioning and mounting the various components of an advertisement or other artwork, following a planned layout. The paste-up may consist of one or more photographs, a piece of hand lettering, type matter, a cartoon, "spot" drawing—all checked for accuracy and readiness for photographic reproduction. At this stage the paste-up is regarded as a camera-ready "mechanical" from which the printing plate is made.

Procedure for Doing a Paste-up and Mechanical

1. Assemble the various components of the artwork and with scissors or other cutting tool, trim excess margins.
2. Mark off on a sheet of illustration board on which the components are to be mounted, the exact position of each component, faithfully following the layout. Use T-square to check for squareness.
3. Mount the components on the board. Though there are several mounting media that can be used, rubber cement has been found to work best.
4. Check once more for squareness to be sure nothing has moved out of position, and touch up with paint or ink where necessary.
5. With a non-reproducible blue pencil or pen, indicate instructions to the printer. Be specific. Include the reproduction size, whether it's to be a negative or positive print, as well as other relevant production notes. If the printing is to be in color, a color swatch should also be shown.

6. Paste a protective paper flap over the finished work to keep it clean and free from dust.

How to Mount With Rubber Cement

The wet mount method:

1. Check to see that the illustration board to receive the mount is spotlessly clean and free of dust or other foreign matter.
2. With a stiff-haired bristle brush or small piece of cardboard used as a scraper, spread an even coat of rubber cement over the entire back of the component to be pasted up. One coat is usually sufficient. If you feel that two coats are necessary, allow the first coat to set before applying the next one.
3. While the rubber cement coating is wet, place the component on the marked-out area on the illustration board. At this point, it's easy to slide the component around to shift it into exact position. You'll have to work fast because rubber cement dries quickly.
4. Place a protective sheet of paper over the mounted component and with a smooth hand motion, or with the edge of a triangle, firmly press down to ensure good adhesion and reduce the chance of bubbles forming.
5. With the aid of a pick-up eraser, pick up any particles of rubber cement that may have oozed out around the edges when the component was pressed down.

The dry mount method:

1. As described previously, coat the entire back of the component with rubber cement, but this time allow the rubber cement to set.
2. Within the marked-out area of the illustration board on which the component is to be mounted, apply a coat of rubber cement and allow that to set, too. This time there's no need to hurry; in fact, the longer the rubber cement is allowed to set, the stronger and more permanent the bond will be.
3. Carefully place one edge of the component in position and press it down, taking every precaution not to let the rest of it touch the cemented area of the illustration board. With the component in a raised position, place a sheet of acetate over the cemented area of the board. Now slowly withdraw the acetate, allowing the component to fall in place. Then smooth down well.
4. With a pick-up eraser, pick up any excess particles of rubber cement.

7

Technical Shortcuts

Proportional Scaling

Here is a simple method by which it's possible to dimensionally change the size of any given rectangular area, making it smaller or larger, as needed, without altering the relative proportions. This will come in especially handy when you are dealing with fractional measurements which ordinarily would call for somewhat involved mathematical computations. For example: Let's say you wish to enlarge a rectangular area which measures 7" high and $4\frac{3}{8}$ " wide, to a new height of $9\frac{1}{2}$ ". The problem is how to arrive at the measure of the new width.

1. On a sheet of paper draw the rectangle in actual size, in this case $7" \times 4\frac{3}{8}"$. Label it ABCD as shown on this page.
2. Extend vertical line AB at point B; similarly extend base line AD at point D.
3. Draw a diagonal line from point A to point C, extending it beyond point C.
4. On the extended vertical line, measure off the height ($9\frac{1}{2}"$) of the desired rectangle and at that point X, draw a horizontal line parallel to the base and crossing the extended diagonal.
5. Where this horizontal line intersects the extended diagonal (point Y), drop a vertical line to the base, creating point Z.
6. Line AZ ($5\frac{15}{16}"$) represents the *new* width of the rectangle and will be in exact proportion to the new height AX ($9\frac{1}{2}"$).

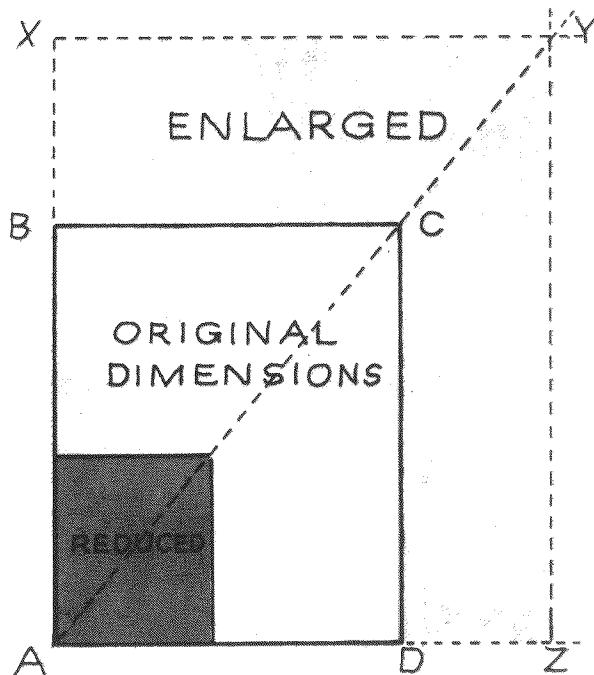


Fig. 24. Proportional scaling.

Locating the Center of a Rectangular Area Without Ruler Measurement

Draw two diagonal lines from one side of the rectangle to the other, forming an X. The point at which the two diagonals intersect represents the exact center, horizontally as well as vertically.

Drawing a Circle Without a Compass

If the circle you wish to draw is larger than the maximum span of your compass, or if you don't have a compass on hand, your problem may be solved in the following way.

1. Cut a narrow strip of thin cardboard or paper, $\frac{1}{2}$ " or so in width, making it a little longer than the radius of the circle to be drawn.
2. Puncture two pinholes, one at each end of the strip, the distance between them measuring the length of the desired radius.
3. Place the strip in position on the drawing surface. In one pinhole insert a thumbtack or pushpin to act as a pivotal center; in the other insert the point of a well-sharpened pencil.
4. To draw the circle, move the strip around its pivotal center like the hand of a clock, gently bearing down on the pencil as you go along. See Fig. 26.

This method can be employed for drawing concentric circles as well. All that's required is to put the pencil holes in measured off positions on the strip.

An alternate way to draw a circle without a compass is to use a thin string instead of a strip: One end of the string is pinned down to the center of the desired circle; the other is wrapped around a pencil. For the circle to be perfect, the string must be kept taut at all times.

Drawing a Freehand Ellipse

Although you can readily buy acetate templates with openings diecut to conform to various dimensions of ellipses, it's good to know how to go about drawing an ellipse freehand. Here are two methods:

The quadrant method:

1. With pencil, lightly sketch in freehand style the approximate size and shape of the desired ellipse, and enclose it in a rectangle.

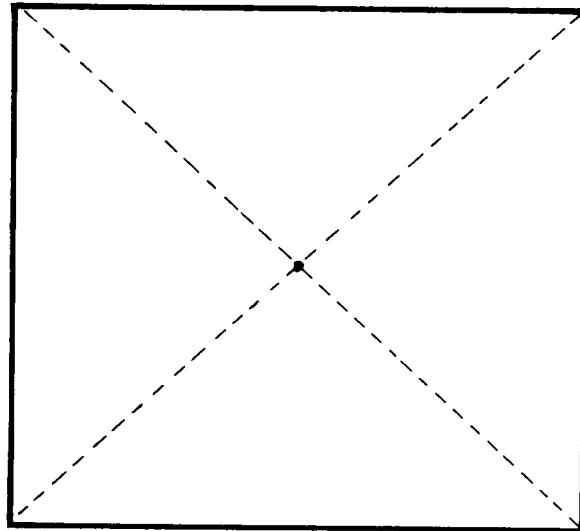


Fig. 25. Locating the center of a rectangular area.

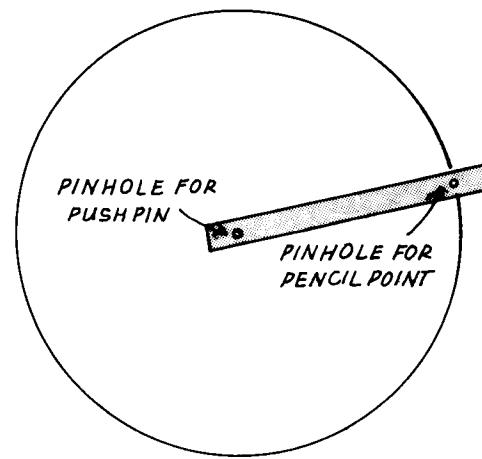


Fig. 26. Drawing a circle without a compass.

2. Draw a vertical and a horizontal line crossing each other at right angles in the center, thus dividing the rectangle into four equal quadrants or sections.

3. Refine the segment of the ellipse in *one* of the quadrants, getting it as perfect as you can.

4. Erase the sketched-in segments in the remaining quadrants.

5. With the aid of tracing paper, transfer the "master" segment to the other three quadrants, using the horizontal and vertical lines as guides.

6. Smooth out any slight discrepancies at the joinings of the four segments.

The 3-point string method:

1. On a sheet of paper, draw horizontal line AB (representing the *length* of the required ellipse) and vertical line CD (representing the *width* of the required ellipse) at right angles to it, going through the center. In geometric terminology, the horizontal line represents the *major axis* of the ellipse; the vertical line represents the *minor axis*. The relative lengths of the major and minor axes determine the dimensions of the ellipse.

2. With a compass set to length CD, using C as the center, strike short arcs cutting the major axis (AB) at points F_1 and F_2 . These serve as the focal points of the ellipse.

3. Insert two pushpins at point F_1 and point F_2 . Insert a third pushpin at point C.

4. Tie a thin string to fit snugly around the three pushpins, forming a triangular loop.

5. Remove the pushpin at point C. Then with a pencil substituted in its place, slowly move it around within the maximum span of the loop, keeping the string taut at all times, as the pencil follows the path of the elliptical shape.

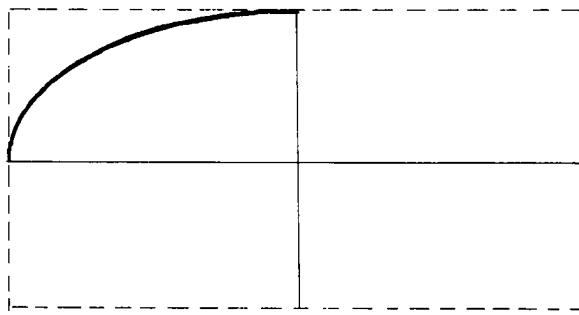


Fig. 27. Quadrant method.

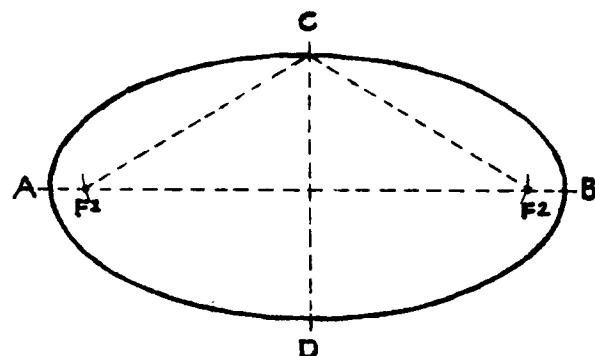


Fig. 28. The 3-point string method.

Dividing a Line of Any Length Into a Specific Number of Equal Parts

An actual problem will show how it works. Let's say you wish to divide a line measuring 10 $\frac{1}{2}$ " into six equal parts. Here's how to proceed.

1. Draw a line AB measured off to the given length (10 $\frac{1}{2}$ ").

2. At point A draw line AC forming an acute angle, and at a length about equal to line AB.

3. Place a ruler along line AC, and starting at point A mark off six arbitrary equal units of measurement—these can be in $\frac{1}{2}$ ", 1", or any other

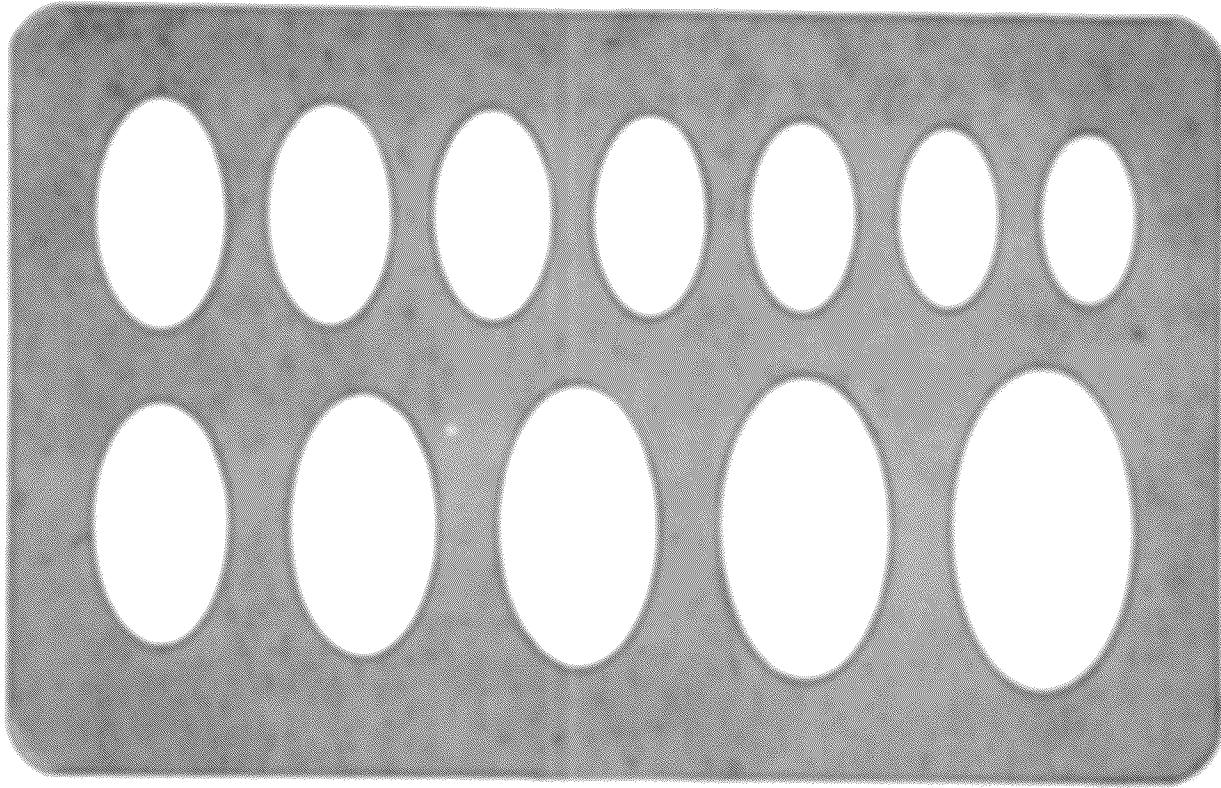


Fig. 29. Ellipse template.

convenient length, as long as the sum total does not go beyond the length of the line.

4. Draw a line connecting the last marking on line AC with point B.

5. With the T-square set in position on the drawing board, adjust the position of the paper so that connecting line CB is parallel to the blade of the T-square.

6. Draw parallel lines from each marked-off point on line AC to line AB. The six points of contact on line AB automatically divide the line into six equal segments.

Drawing a Painted Circle With a Pair of Dividers

1. Tie or tape a lettering or watercolor brush to one of the legs of a divider.

2. Spread the divider to the required radius of the circle.

3. Dip the brush in paint or ink, as the case may be, and twirl the divider around, using it in the manner of a compass. The larger the brush and the more pressure applied, the heavier will be the rim of the circle. You may leave the circle in outline form or fill it in solid, as you wish. If you don't have a divider on hand, a brush attached to a compass works equally well.

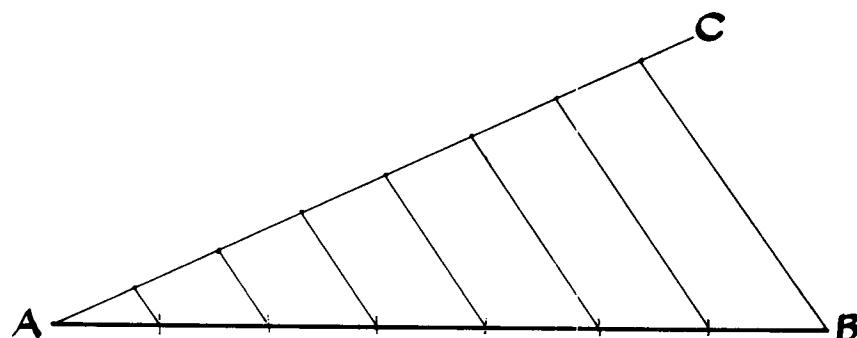


Fig. 30. Dividing a line into a given number of equal segments.

8

Studio Tips

A Good Way to Keep Lettering and Ruling Pens in Top Working Condition

To prevent a lettering or ruling pen from forming an inky crust which seriously impairs its further usefulness, always rinse it in water, then wipe dry with a soft cloth.

Special Care and Maintenance of Technical Fountain Pens

Rapidograph and similar technical fountain pens tend to clog unless maintained in meticulously clean condition. Always remove the ink from the reservoir, wash the pen in warm water and wipe the point carefully before putting it away for any length of time. This is good practice to follow even when so-called "non-clogging" inks are used.

Care and Maintenance of Lettering Brushes

Showcard lettering brushes are expensive, but need not be expendable. A good lettering brush can last almost indefinitely if handled with loving care. Never use a brush meant for water-based showcard color with any oil-based medium. To do so, would make the fine sable hair bristles lose their natural resiliency, thus making them floppy and troublesome to work with.

Sharpening a New Pencil

A good, but simple, point to remember when sharpening a new drawing pencil: To retain the markings which identify the grade (H, HB, 2B, etc.), always sharpen the *non-marked* end.

Getting a Ruling Pen to Work With Paint

Though a ruling pen is used most of the time with India ink, it works just as well with poster color if a few drops of water are added to make it more free flowing.

Preventing Ink From Crawling Under a Ruler

A narrow strip or two of masking tape affixed to the underside of a ruler when it is used as a straightedge for ruling in ink lines will be sufficient to raise the ruler enough to prevent the ink from smudging.

Restoring Original Working Consistency of Poster Color

If, for some reason, poster color has thickened, adding a few drops of water will restore its original fluidity and working quality. When not in use, poster colors should be kept tightly closed to avoid excessive evaporation and drying up.

Rubber Cement in Unbreakable Dispensers

If your equipment is to include a dispenser jar for rubber cement, you may want to consider getting the plastic rather than the glass kind for obvious reasons. Plastic jars are practically unbreakable if accidentally dropped.

Thinning Down Rubber Cement

Make it a habit to keep rubber cement containers tightly closed when not in use. If left open even for a short time, rubber cement evaporates, becoming lumpy and hard to manage. To restore its original consistency, add a little rubber cement thinner and stir thoroughly.

Removing a Rubber Cement Paste-up

To remove a paste-up mounted with rubber cement, it helps to apply a wad of cotton soaked with rubber cement thinner around the edges. The fluid penetrates the surface and softens the cement, thus making it possible to lift up and re-position the paste-up.

Using Soap to Prevent Crawling of Paint

If you are working with water-based poster color on a glossy or non-absorbent surface, you may find that the paint seems to crawl and does not adhere well. In that case, try brushing the paint on a piece of hand soap before applying it to the surface. It usually helps.

The Use of Blue Pencil for Work Prepared for Photo Reproduction

Use a non-reproducible blue pencil or pen to write down the size and other relevant specifications on artwork prepared for photo reproduction. The camera lens is "blind" to this type of blue and the markings won't show up on the print.

Removing Stubborn Smudge Spots on Drawings

A cotton swab soaked in a weak solution of common household bleach applied to the drawing surface will, in most cases, remove any stubborn spot or ink smudge which doesn't come off too readily with an eraser.

Drawing a Circle Without Showing a Center Pinhole

To draw a circle without a visible center mark, rubber cement a small square of cardboard over the predetermined center. With that as a platform to anchor the point of the compass, draw the circle. Then lift off the cardboard square and with a pick-up eraser remove the rubber cement. No telltale center mark will show.

Breaking in a New Steel Penpoint

Sometimes a steel penpoint used for the first time repels the ink and refuses to start. When that happens, it helps to momentarily hold a match or lighter flame to the point. The heat burns off the greasy coating and from then on the pen should function normally. This also applies to ballpoint pens.

Keeping Markers From Spreading on Absorbent Stock

When markers are applied to newsprint or similar absorbent stock, the colors sometimes tend to run and bleed through. You can prevent this by first coating the surface of the stock with a colorless acrylic spray. This reduces the porosity of the stock, thus providing a more compatible work surface for the markers.

Testing Out Markers Before You Buy Them

When purchasing markers, don't be hesitant about testing them beforehand. If markers have been kept overly long in storage or on the display rack, they may be partially or totally dried out. "Try before you buy" is a good policy to

follow in this case. Also remember to keep markers tightly covered when not in use. The more airtight the closure cap is set on the casing, the longer it will retain its original free-flowing freshness.

Color Mixing Hint

When mixing two or more colors to get additional colors and shades, it usually works out best to start with the lighter of the colors as a base, and add the darker a little at a time, as needed. For example, when combining white and black to get a gray, start with the white as a base, then slowly add black—not the other way around. Similarly, in combining yellow and blue to get a green, start with the yellow (the lighter of the two colors) and add blue.

If you start with the darker of the two colors, you're likely to end up with more paint than you need before you are through. In general, deeper colors, that is, those darker in value possess greater chromatic potency than lighter ones.

Filling a Ruling Pen

The most expedient way to fill a ruling pen when working with India ink is to place a drop or two in the space between the two blades using the nipple-like rubber tubing which forms the underside of the bottle stopper. When working with thinned down poster color, the ruling pen can be filled with a discarded eye dropper or with the aid of a brush. In any case, after each filling the outside of the blades of the pen should be carefully wiped to keep them clean. This will prevent smudged lines.

How to Prevent Overloading Your Brush

To prevent overloading your brush, and also to keep the handle dry and clean, avoid dipping the brush directly into the jar of paint every time you recharge it. Instead, pour one or two tablespoons of paint into a shallow dish or on a scrap of cardboard, using that as a reservoir. This way, you'll have better control of the amount of paint your brush carries, the handle will be free of paint, and at the same time you'll have at your disposal a handy surface for periodically stroking and palleting out your brush.

Cropping a Picture Image

By a simple homemade device consisting of two L-shaped paper or cardboard cutouts, it's easy to select and "crop" a portion of a photo or picture image. The two cutouts, each facing the other in overlapping fashion to form an adjustable frame, are placed over that area to be featured as a close-up. The relative dimensions of the cropped area are optional.

Remedy for Perspiring Hands

Artwork, to be presentable, must be spotlessly clean and free from any evidence of smudge or grease marks—especially if it's intended for photographic reproduction. If the palms of your hands tend to perspire freely in humid weather, try working with a pair of thin white cotton gloves, with the upper part of the fingers cut away. Another solution to the problem is to rub a little talcum powder into your hands to keep them dry.

Making Any White Paper Translucent

If you run short of regular tracing paper, a thin sheet of white bond paper can be utilized for tracing purposes by rubbing lightly over the surface with turpentine, kerosene, or other mineral spirits. Try it: it works.

An Alternative to Carbon Paper for Tracing Purposes

When you want to trace artwork rendered on thin paper and you don't have a sheet of carbon paper on hand, you can get by with rubbing soft pencil smudge lines on the back side of the artwork. This can be done either to the entire back or else directly underneath the lines of the artwork.

Drawing on a Glossy Surface

If you have occasion to draw or mark on acetate, glass, glossy photographs, or similar shiny surfaces, try a China marker or a Stabilo pencil—both of which are made for this purpose. They can be had in different colors and grades.

Uncapping a Difficult-to-open Paint Jar

To unscrew a stubborn paint jar cap which refuses to budge by the usual means—tapping, twisting with a pair of pliers, etc.—try this as a last resort: Place the jar upside down in a basin of water and let it stay that way overnight. The cap can then be unscrewed without difficulty.

To avoid this problem in the future, make it a

habit to keep the spiral rim of the jar clean and free from paint.

Restoring the Ink Flow of a Partially Clogged Ruling Pen

You can continue to work with a ruling pen that has become partially clogged while in use, if you stroke it gently across the side of your finger once or twice.

Glossary of Common Terms Used in Art and Advertising

Animation—A series of individual cartoons or drawings photographed in sequence to produce the visual effect of motion when projected.

Art gum—Colloquially referred to as “soap eraser.” A soft spongy compound used to erase pencil lines.

Benday—A method of obtaining textures or tones by means of a prepared screen of dots; named after Benjamin Day who is credited with its introduction to the graphic arts.

Blow-up—Usually refers to a greatly enlarged photographic reproduction.

Bond paper—A good quality, hard-surfaced paper popular for business stationery. Also used for sketching, printing, and paper sign-work.

Bristol board—A fine grade of lightweight cardboard, with a receptive work surface for pen, crayon, marker, and brush.

Bullet—Solid ball-shaped typographic device used mostly for ornamental purposes in typographic layouts. Bullets come in various sizes identified by points.

b/w—Short for black and white, as distinguished from full color.

Calligraphy—An esthetic blend of formal handwriting and lettering, most often rendered with a pen.

Caption—Headline display letters employed as a focal point in a typographic layout.

Clip file—Personally acquired source material of photos, illustrations, and pictorial matter used as reference by artists and designers.

Coated paper—Generally refers to printing paper with a hard smooth finish, thus providing a good printing surface.

Comp—Short for “comprehensive.” A semi-finished layout in black-and-white or color, showing all units in the layout in position. It represents the final step before proceeding with the finished artwork.

Copy—Refers to text or wording. It is also used to mean any matter to be reproduced—typography, artwork, photos, etc.

Copy fitting—Computing the amount of space it will take to set up copy in a particular type face and size, or the number of characters of a specific alphabet to fit into a given area on the layout.

Crop marks—Fine guidelines on artwork or photographs indicating the trim size or cutting dimensions.

Cropping—A means of “dimensionally” framing a photo or artwork to feature the desired section or “close-up.”

Designer colors—Richly pigmented water-based colors put up in tube form, used by illustrators and designers.

Display type—Type of a large size or heavier face used mainly in advertising and publishing for headlines, feature copy, and titles of books.

Drybrush—A technique used in lettering or illustration where the brush is intentionally not fully charged with paint to achieve dynamic rough-edged strokes.

Dummy—A preliminary visualization of a proposed book, magazine, or brochure, usually prepared actual size.

Fixative—A quick-drying colorless fluid which when sprayed over charcoal or pastel work protects it from smudging.

Font—In the language of letterpress, a complete alphabet of any one type face in a given point size—upper case, lower case, numerals, punctuation marks, etc.

Freelance artist—One who works independently and on an agreed fee basis, rather than on a stipulated salary.

Frisket—A cutout sheet of paper, acetate, or other material which serves as a stencil or mask for spraying or painting.

Glossy—A photograph or stat having a shiny surface, as contrasted to a dull or mat surface.

Gravure—A classification of commercial printing in which the printing image appears below the surface of the printing plate, similar in principle to engraving and etching.

Halftone—A print in which gradations of tones are achieved by a photographic process which converts the continuous tones of a picture into a myriad of interspersed dots of varying size.

Highlight—The lightest or whitest part in a photograph or illustration usually free from any appearance of tones or dots.

Illustration board—High-quality cardboard made specifically for artists' use.

Intaglio—Printing in which the image to be reproduced is below the surface of the plate. Engraving, etching, and gravure are examples.

India ink—A richly pigmented water-based drawing ink used in the preparation of reproduction lettering and black-and-white artwork intended for photographic reproduction.

Italic—A classification of alphabet characterized by letterforms which slant forward at a fixed angle. Italics are often reserved for emphasis.

Justification—Spacing out lines of type so that all the lines in a body of text are of equal measure or length.

Kneaded eraser—A putty-like pliable substance used to erase pencil lines. It is free from grit or other abrasives.

Layout—An esthetic arrangement of the various units comprising any piece of advertising matter.

Letterpress printing—Printing from a metal plate of type whose ink-taking surface is raised above the level of the ground of the plate. It is a form of relief printing which implies printing from a raised surface.

Line art—A generic term which applies to illustration, lettering, or type delineated as lines, solids, or dotted textures in as distinguished from subtle blending and continuous tones.

Logotype—A copyrighted commercial signature or trademark, sometimes referred to as a corporate image design. Also referred to as "logo," for short.

Lower case—The minuscule or small letters of the alphabet, abbreviated l.c.

Masthead—A unique design, logo, or distinctive style of type used as a permanent identification of a newspaper or magazine.

Mechanical—Complete paste-up of all elements in a layout, squared and touched up, ready for camera.

Mineral spirits—A petroleum distillate such as benzene, turpentine, or kerosene used as a solvent and thinner for oil-based paints.

Negative—A photographic image in which the black and white relationship of the original copy is reversed, as distinguished from a positive where the relationship is unchanged.

Newsprint—A low-grade semi-transparent paper used mainly for newspapers, but also has diverse applications in studio and classroom work for sketching.

Offset—A printing process which pre-prints an image in reverse on a blanket which comes in contact with the paper, the image having then corrected itself. In essence it is a print from a print.

Opaque projector—A unit for enlarging artwork which operates somewhat like a slide projector, except that what is projected can be paper, cardboard, or any three-dimensional opaque material.

Paste-up—The process of pasting up all the design elements in their proper position corresponding to the approved layout. Also the board on which the units are mounted.

Photostat—A photographic reproduction made from a paper negative instead of a film negative. It can either be a positive or negative image, as desired.

Pick-up eraser—A pliable square of dried crepe-like rubber used to pick up excess particles of dried-up rubber cement after mounting artwork.

Ply—A unit of measure relating to the thickness of cardboard, designated as 1 ply, 2 ply, etc.

Positive—A photographic image which retains the black and white relationship of the original copy, as distinguished from a negative which reverses the relationship.

Pushpin—A long sharp-pointed type of thumbtack that comes with a convenient finger grip to facilitate inserting and pulling it out. Used for displaying work on bulletin boards and for various other tacking purposes.

Register—Color alignment control. Printing of several colors in exact relationship to each other.

Register marks—Fine crosslines drawn on the art and duplicated on each plate to facilitate fitting one color over another in exact alignment.

Relief printing—Printing from a plate where the design image is on a raised surface; letterpress and woodblock are examples.

Repro proofs—Hand-pulled printers' proofs on specially smooth paper to assure perfect copy for reproduction.

Roman alphabet—A classification of alphabet where the letter is vertical and square to the base rather than on a slant as in italics; also refers to letterforms based on a thick-and-thin structure.

Ruling pen—A mechanical instrument for ruling lines of controlled thickness.

Sans serif—Literally, "without serif." Type styles in which letters are without spurs or similar finishing terminals.

Scaling—A method of determining the new dimensions of artwork whether reduced or enlarged.

Script—A classification of alphabet based on formal handwriting usually with connecting links.

Serif—The finishing-off stroke or spur at the end of the main strokes of certain alphabet styles.

Serigraphy—The silkscreen process is called serigraphy when it is applied to the reproduction of fine art by artists and printmakers.

Shading sheets—Overlay sheets with imprinted lines, dots, or other overall patterns used for getting tonal effects in photo-reproduction processes.

Showcard color—An opaque water-based tempera paint used in the showcard and display field for lettering and design.

Silkscreen printing—A printing process whereby paint or other medium is squeegeed through the mesh of a tightly stretched screen of silk. It is a sophisticated application of the basic stencil process.

"Specs"—Short for specifications, in relation to production notes.

"Spot"—A small illustration mostly rendered in pen and ink, employed as a pictorial element in a layout.

s/s—Abbreviation for *same size*, a notation relating to the size of artwork to be reproduced.

Stat—Short term for photostat.

Storyboard—A series of drawings used to visualize the key sequences in the planning of an animated cartoon or TV commercial.

Tempera paint—Opaque water-based paint most frequently packaged in the form of poster or showcard colors and put up in jars.

Template—A mold or pattern used as a guide to mark out a shape with mechanical precision.

Thumbnail sketch—A miniature experimental layout sketch preliminary to the full size comprehensive.

Transfer lettering—Pressure-sensitive type or lettering printed on a backing sheet from which it can be transferred letter by letter to illustration board or other receiving surface.

T-square—A straightedge made of wood, metal, or plastic with a long blade and short crossbar, shaped like the letter T. It is the major tool used to square up artwork on the drawing board.

Uppercase—The capital letters of the alphabet, abbreviated u.c.

Value—The degree of lightness or darkness of a color. The “value” of any given color can be

altered by the addition of white or black.

Visual—A layout or semi-finished sketch prepared for client's approval before proceeding with the finished artwork.

Publishers and Suppliers of Ready-to-use Art for the Trade

**Clip Art Company, 351 East Hillcrest Boulevard,
Monrovia, CA 91016**

Publishers of a series of brochures showing a wide variety of small-sized line drawings suitable for letterheads, newspaper, and trade magazine ads as well as direct mail spots.

Culver Pictures Inc., 660 First Avenue, New York, NY 10016

Offers an indexed collection of more than eight million photographs, engravings, and old prints. Available to artists, designers, and the general public.

Dynamic Graphics Inc., 6707 North Sheridan Road, Peoria, IL 61614

A complete clip art service for professional use. Highly distinctive and expertly rendered illustrations and halftone drawings suitable for letterheads, direct mail advertising, etc. Offers color separation proofs for reproduction purposes. The service is available to the trade on an individual and monthly subscription basis.

Forward Graphics, 2 Ninth Street, Des Moines, IA 50309

An idea clip art service designed for the trade, available on a monthly subscription basis.

Idea Art, 740 Broadway, New York, NY 10003

Creators and printers of promotional stationery, direct mail flyers, etc., enhanced with an extensive assortment of cartoon-style art in full color.

Metro Associated Services, Inc., 80 Madison Avenue, New York, NY 10016

The largest art service of its kind, supplying line and halftone art and "mats" for syndicated newspaper advertising paid for on a prorated circulation basis.

The Dick Sutphen Studio, Inc., Box 628, Scottsdale, AZ. 85252

A collection of highly stylized pen-and-ink cartoons, put up in a special looseleaf folder. Applicable for greeting cards, announcements, and for varied advertising purposes.

Trend Enterprises, P.O. Box 3073, St. Paul, MN 55165

Publishers of a series of brochures showing easy-to-draw illustrations and decorative "spots" designed specifically for use on school bulletins and display boards. Reproductions are printed on paper as well as on acetate projection transparencies.

Harry Volk Art Studio, Box 4098, Rockford, IL 61110

Offers a prodigious assortment of ready-to-use art in the form of finely executed pen-and-ink drawings for advertisers and printers. Includes a basic inventory of hundreds of clip art booklets with new material published periodically on a regular basis.

Note: For books showing copyright-free old-type illustrations and steel engravings contact:

**Dover Publications Inc., 180 Varick Street,
New York, NY 10013**

**Art Direction Book Co., 19 West 44 Street,
New York, NY 10036**

For an encyclopedic collection of rare drawings, etchings, and photographs of historic value, contact:

**Bettmann Archives Inc., 136 East 57 Street,
New York, NY 10022**

Metric Conversion Factors

Millimetres $\times .03937$ = inches

Millimetres $\div 25.4$ = inches

Centimetres $\times .3937$ = inches

Centimetres $\div 2.54$ = inches

Metres $\times 39.37$ = inches

Metres $\times 3.281$ = feet

Metres $\times 1.094$ = yards

Kilometres $\times .621$ = miles

Kilometres $\div 1.6093$ = miles

Kilometres $\times 3280.8693$ = feet

Square Millimetres $\times .00155$ = sq. inches

Square Millimetres $\div 645.1$ = sq. inches

1 Square Millimetre = 1973.5 circular mills

Square Centimetres $\times .155$ = sq. inches

Square Centimetres $\div 6.451$ = sq. inches

Square Metres $\times 10.764$ = sq. feet

Square Kilometres $\times 247.1$ = acres

Hectary $\times 2.471$ = acres

Cubic Centimetres $\div 16383$ = cubic inches

Cubic Centimetres $\div 3.69$ = fl. drams (U.S.P.)

Cubic Centimetres $\div 29.57$ = fluid oz. (U.S.P.)

Cubic Metres $\times 35.315$ = cubic feet

Cubic Metres $\times 1.308$ = cubic yards

Cubic Metres $\times 264.2$ = gallons (231. cu. in.)

Litres $\times 61.022$ = cubic in.

Litres $\times 33.8$ = fluid ounces

Litres $\times .2642$ = gallons (231. cu. in.)

Litres $\div 3.78$ = gallons (231. cu. in.)

Litres $\div 28.316$ = cubic feet

Hectolitres $\times 3.531$ = cubic feet

Hectolitres $\times 2.84$ = bushels (2150.42 cu. in.)

Hectolitres $\times .131$ = cubic yards

Hectolitres $\div 26.42$ = gallons (231. cu. in.)

Grammes $\times 15.432$ = grains

Grammes $\div 981.$ = dynes

Grammes (Water) $\div 29.57$ = fluid ounces

Grammes $\div 28.35$ = ounces avoirdupois

Grammes per cu. cent. $\div 27.7$ = lbs. per cu. in.

1 Gram = .03216 ounce troy

Joule $\times .7373$ = foot pounds

Kilo-grammes $\times 2.2046$ = pounds

Kilo-grammes $\times 35.3$ = ounces avoirdupois

Kilo-grammes $\div 907.2$ = tons (2,000 lbs.)

1 Metric ton = 2204.6 pounds

Kilo-gr. per sq. cent. $\times 14.223$ = lbs. per sq. in.

Kilo-gram-metres $\times 7.233$ = foot lbs.

Kilo-gr. per Metre $\times .672$ = lbs. per foot

1 Kilogram per sq. millimeter = 1422.32 lbs. per sq. in.

1.0335 Kilo-gr. per sq. Cent. = 1 atmosphere

1.0335 Kilo-gr. per sq. Cent. = 14.7 lbs. per sq. in.

Kilo-gr. per Cu. Metre $\times .062$ = lbs. per cu. ft.