



Parallel Lines 1.



Angle Properties Revision.

Copy each diagram. Find the value of the letters. Where there is more than one letter to find, find the letters in alphabetical order. Give a reason with the answer. (Diagrams not drawn to scale).

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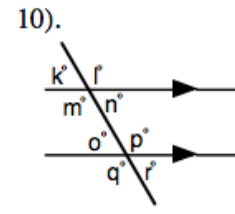
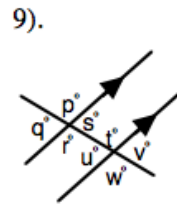
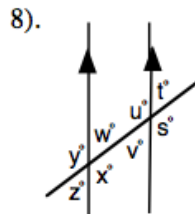
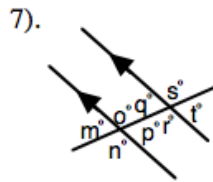
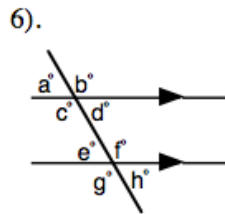
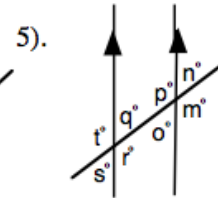
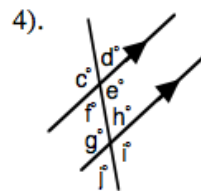
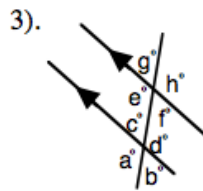
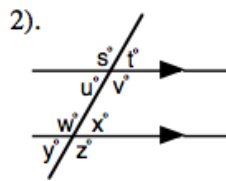
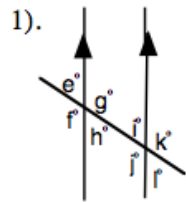


Parallel Lines.

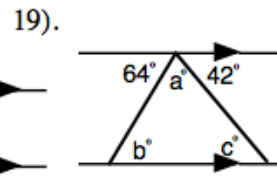
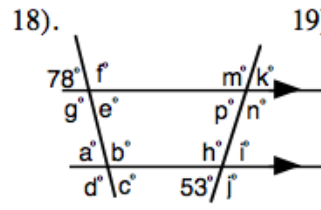
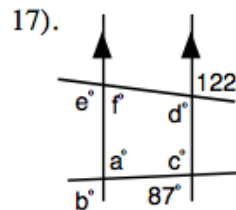
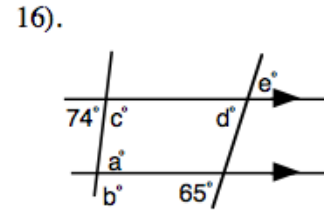
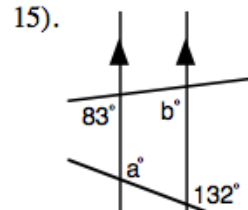
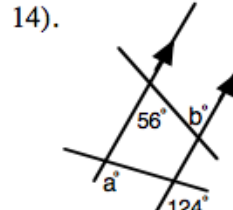
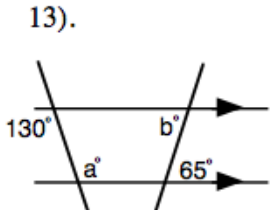
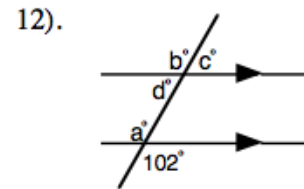
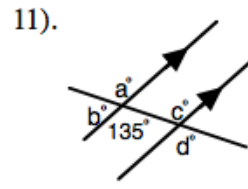
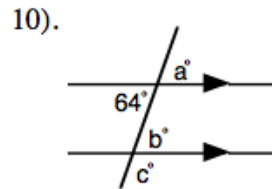
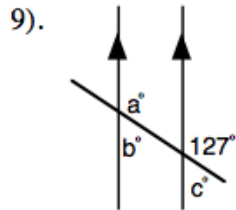
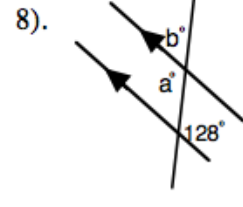
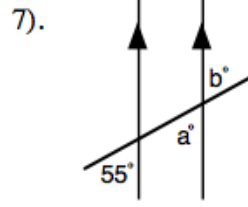
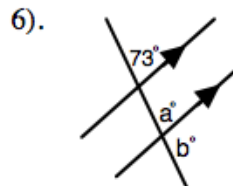
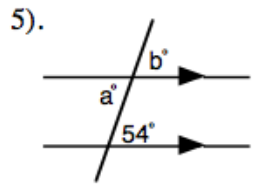
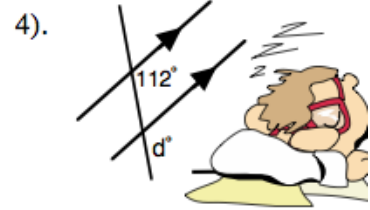
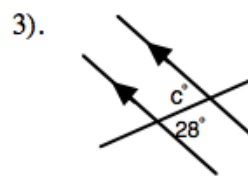
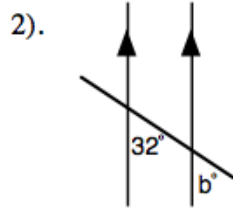
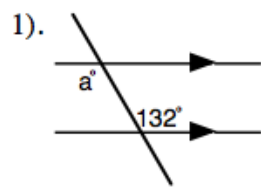


A. Copy each diagram into your book.

- a). In each diagram there are **two** pairs of alternate angles. Identify them.
 b). In each diagram there are **four** pairs of corresponding angles. Identify them.



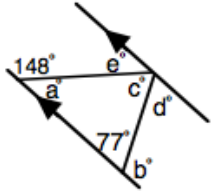
- B. Copy the diagrams into your book. Find the value of the letters.
 Where there is more than one letter to find, find the missing letters in **alphabetical** order.
Give a reason with the answer. (Diagrams not drawn to scale).



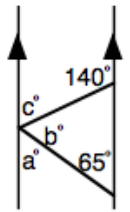
20). For Question 19, explain why the interior angles of a triangle add up to 180° .



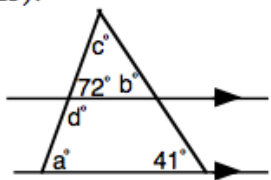
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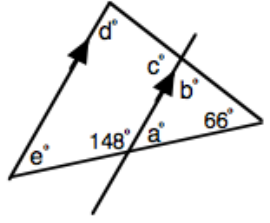
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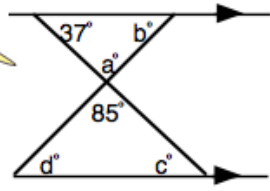
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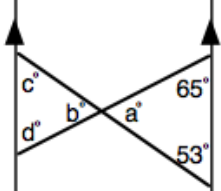
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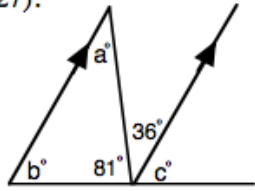
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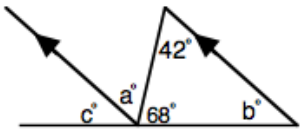
26).



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29). For Questions 27 and 28, explain why the exterior angle of a triangle equals the sum of the two interior opposite angles.



Parallel Lines 2.

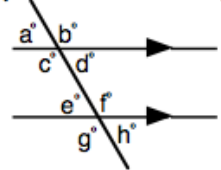


Interior Angles ("C" shapes).

Interior angles are also known as co-interior angles, allied angles or supplementary angles.

A). In each diagram there are **two** pairs of interior angles. Identify them both.

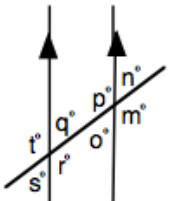
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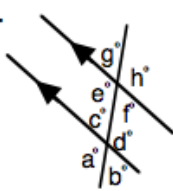
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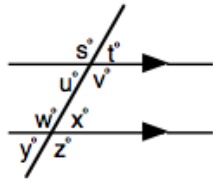
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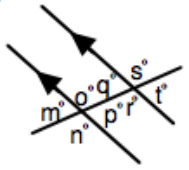
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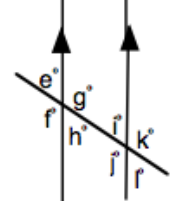
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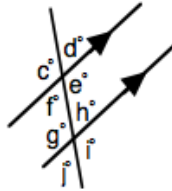
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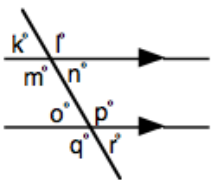
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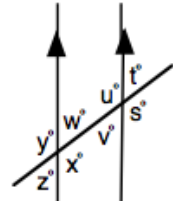
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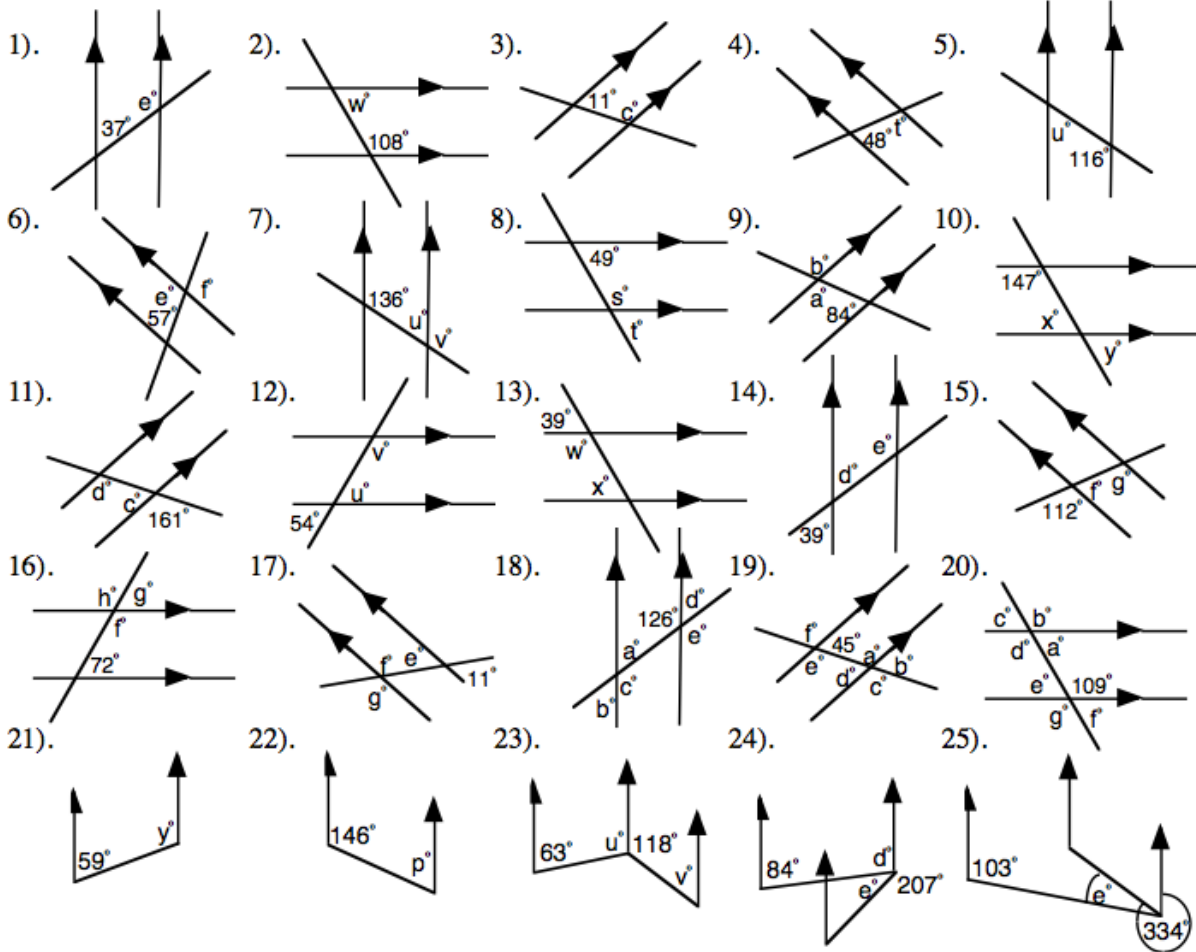
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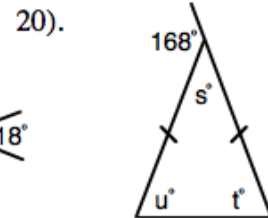
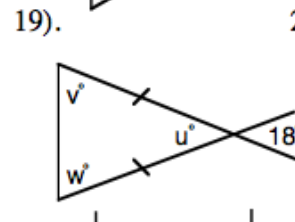
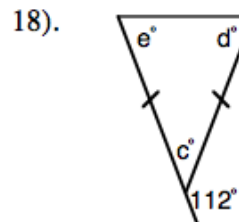
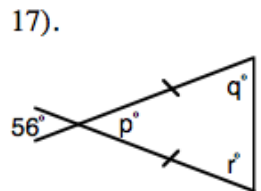
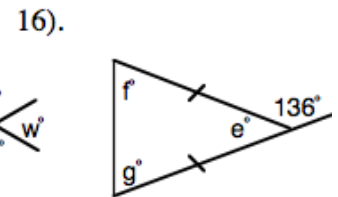
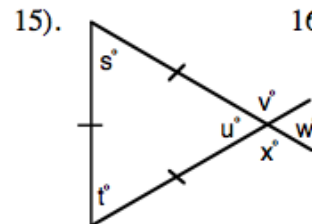
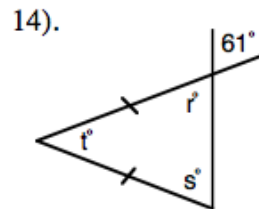
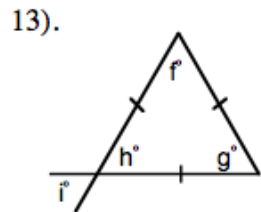
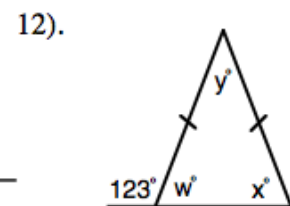
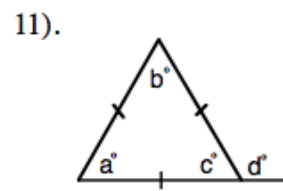
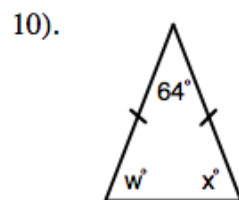
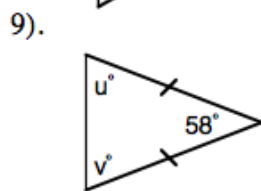
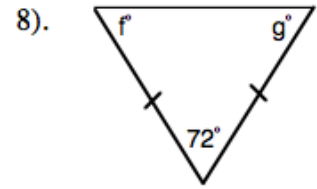
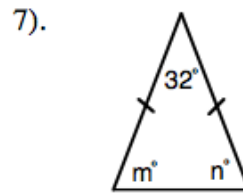
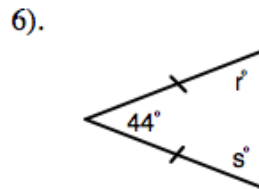
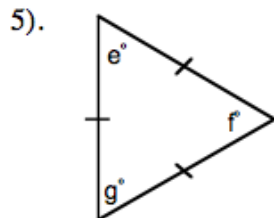
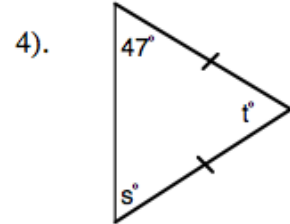
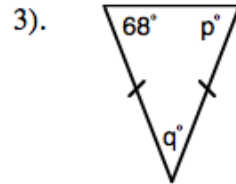
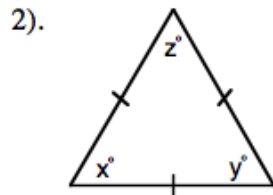
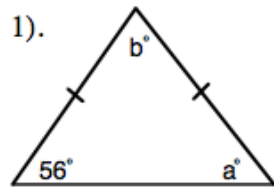
B). Find the value of the letters. Where there is more than one letter to find, find the missing letters in **alphabetical order**. Give a reason with the answer. (Diagrams are not drawn to scale).



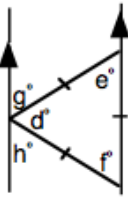
Special Triangles.



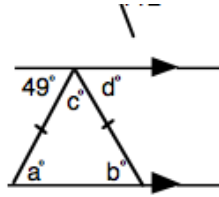
Find the value of the letters. Where there is more than one letter to find, find the missing letters in **alphabetical order**. Give a reason with the answer. (Diagrams are not drawn to scale).



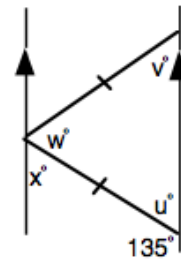
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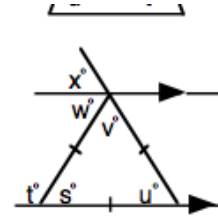
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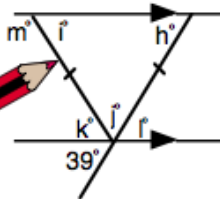
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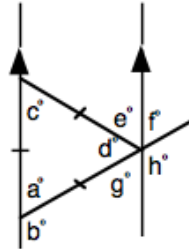
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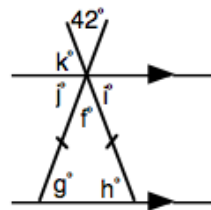
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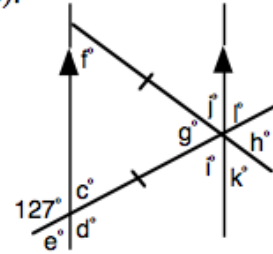
26).



27).



28).



ANSWERS

Page 23. Parallel Lines 1.

Angle properties Revision

- 1). $a = 55^\circ$ 2). $b = 53^\circ$ 3). $c = 64^\circ, d = 116^\circ$ 4). $e = 96^\circ$
 5). $f = 73^\circ, g = 107^\circ$ 6). $h = 37^\circ, i = 59^\circ$ 7). $j = 37^\circ, k = 71^\circ$
 8). $m = 21^\circ, n = 69^\circ, p = 159^\circ, q = 159^\circ$ 9). $r = 86^\circ$ 10). $s = 107^\circ, t = 33^\circ$
 11). $u = 138^\circ, v = 23^\circ$ 12). $w = 45^\circ, x = 135^\circ$ 13). $y = 23^\circ, z = 23^\circ$
 14). $a = 45^\circ, b = 135^\circ$ 15). $c = 13^\circ, d = 28^\circ, e = 34^\circ, f = 118^\circ$
 16). $g = 58^\circ, h = 76^\circ, i = 134^\circ, j = 61^\circ$

Parallel Lines.

- A. 1). a). $g = j, h = i$ b). $e = i, g = k, f = j, h = l$
 2). a). $v = w, u = x$ b). $s = w, u = y, t = x, v = z$

- | | |
|-------------------------|----------------------------------|
| 3). a). $e = d, c = f$ | b). $g = c, e = a, h = d, f = b$ |
| 4). a). $e = g, f = h$ | b). $d = h, e = i, c = g, f = j$ |
| 5). a). $p = r, q = o$ | b). $t = p, q = n, m = r, o = s$ |
| 6). a). $c = f, d = e$ | b). $b = f, d = h, a = e, c = g$ |
| 7). a). $q = p, o = r$ | b). $m = q, o = s, p = t, n = r$ |
| 8). a). $w = v, u = x$ | b). $y = u, w = t, x = s, z = v$ |
| 9). a). $r = t, s = u$ | b). $p = t, s = v, q = u, r = w$ |
| 10). a). $m = p, n = o$ | b). $l = p, n = r, k = o, m = q$ |

Page 24.

- B. 1). $a = 132^\circ$ 2). $b = 32^\circ$ 3). $c = 28^\circ$ 4). $d = 112^\circ$ 5). $a = 54^\circ, b = 54^\circ$
 6). $a = 73^\circ, b = 107^\circ$ 7). $a = 55^\circ, b = 55^\circ$ 8). $a = 128^\circ, b = 52^\circ$
 9). $a = 127^\circ, b = 53^\circ, c = 53^\circ$ 10). $a = 64^\circ, b = 64^\circ, c = 116^\circ$
 11). $a = 135^\circ, b = 45^\circ, c = 135^\circ, d = 135^\circ$ 12). $a = 102^\circ, b = 102^\circ, c = 78^\circ, d = 78^\circ$
 13). $a = 130^\circ, b = 65^\circ$ 14). $a = 124^\circ, b = 56^\circ$ 15). $a = 132^\circ, b = 83^\circ$
 16). $a = 74^\circ, b = 106^\circ, c = 106^\circ, d = 65^\circ, e = 65^\circ$
 17). $a = 87^\circ, b = 87^\circ, c = 93^\circ, d = 122^\circ, e = 122^\circ, f = 58^\circ$
 18). $a = 78^\circ, b = 102^\circ, c = 78^\circ, d = 102^\circ, e = 78^\circ, f = 102^\circ, g = 102^\circ, h = 127^\circ, i = 53^\circ,$
 $j = 127^\circ, k = 53^\circ, n = 127^\circ, p = 53^\circ, m = 127^\circ$
 19). $a = 74^\circ, b = 64^\circ, c = 42^\circ$
 20). $64 + a + 42$ on a straight line = 180, $c = 64, b = 42$, (alt), a is common.
 Therefore the triangle must add up to 180° .
 21). $a = 32^\circ, b = 103^\circ, c = 71^\circ, d = 77^\circ, e = 32^\circ$ 22). $a = 65^\circ, b = 75^\circ, c = 40^\circ$
 23). $a = 72^\circ, b = 41^\circ, c = 67^\circ, d = 108^\circ$ 24). $a = 32^\circ, b = 82^\circ, c = 98^\circ, d = 82^\circ, e = 32^\circ$
 25). $a = 85^\circ, b = 58^\circ, c = 37^\circ, d = 58^\circ$ 26). $a = 62^\circ, b = 62^\circ, c = 53, d = 65^\circ$
 27). $a = 36^\circ, b = 63^\circ, c = 63^\circ$ 28). $a = 42^\circ, b = 70^\circ, c = 70^\circ$
 29). In Q. 27 $81 + (36 + c) = 180^\circ$ on a straight line
 $81 + (a + b) = 180^\circ$ angles in a triangle
 Therefore $(36 + c)$ -exterior angle = $(a+b)$ two interior angles.
 Same for Q. 28

Page 25. Parallel Lines 2.

Interior

- A 1). $c/e, d/f$ 2). $s/t, r/u$ 3). $p/q, r/o$ 4). $e/c, f/d$ 5). $u/w, v/x$
6). $o/q, p/r$ 7). $g/i, h/j$ 8). $f/g, e/h$ 9). $m/o, n/p$ 10). $w/u, x/v$
- B. 1). $e = 143^\circ$ 2). $w = 72^\circ$ 3). $c = 169^\circ$ 4). $t = 132^\circ$ 5). $u = 64^\circ$
6). $e = 123^\circ f = 123^\circ$ 7). $u = 44^\circ v = 136^\circ$ 8). $s = 131^\circ t = 49^\circ$
9). $a = 96^\circ b = 96^\circ$ 10). $x = 33^\circ y = 33^\circ$ 11). $c = 19^\circ d = 161^\circ$
12). $u = 54^\circ v = 126^\circ$ 13). $w = 141^\circ x = 39^\circ$ 14). $d = 39^\circ e = 141^\circ$
15). $f = 68^\circ g = 112^\circ$ 16). $f = 108^\circ g = 72^\circ h = 108^\circ$ 17). $e = 11^\circ f = 169^\circ g = 169^\circ$
18). $a = 54^\circ b = 54^\circ c = 126^\circ d = 54^\circ e = 126^\circ$
19). $a = 135^\circ b = 45^\circ c = 135^\circ d = 45^\circ e = 135^\circ f = 135^\circ$
20). $a = 71^\circ b = 109^\circ c = 71^\circ d = 109^\circ e = 71^\circ f = 71^\circ g = 109^\circ$
21). $y = 121^\circ$ 22). $p = 34^\circ$ 23). $u = 117^\circ v = 62^\circ$ 24). $d = 96^\circ e = 57^\circ$
25). $e = 51^\circ$

Page 26. Special triangles

- 1). $a = 56^\circ b = 68^\circ$ 2). $x = y = z = 60^\circ$ 3). $p = 68^\circ q = 44^\circ$ 4). $s = 47^\circ t = 86^\circ$
5). $e = f = g = 60^\circ$ 6). $r = s = 68^\circ$ 7). $m = n = 74^\circ$ 8). $f = g = 54^\circ$
9). $u = v = 61^\circ$ 10). $w = x = 58^\circ$ 11). $a = b = c = 60^\circ d = 120^\circ$
12). $w = 57^\circ x = 57^\circ y = 66^\circ$ 13). $f = g = h = 60^\circ i = 60^\circ$ 14). $r = 61^\circ s = 61^\circ t = 58^\circ$
15). $s = t = u = 60^\circ v = 120^\circ w = 60^\circ x = 120^\circ$ 16). $e = 44^\circ f = g = 68^\circ$
17). $p = 56^\circ q = r = 62^\circ$ 18). $c = 68^\circ d = e = 56^\circ$ 19). $u = 18^\circ v = w = 81^\circ$

- 20). $s = 12^\circ t = u = 84^\circ$ 21). $d = e = f = 60^\circ g = h = 60^\circ$ 22). $a = 49^\circ b = 49^\circ c = 82^\circ d = 49^\circ$
23). $u = 45^\circ v = 45^\circ w = 90^\circ x = 45^\circ$ 24). $s = u = v = 60^\circ t = 120^\circ w = 60^\circ x = 60^\circ$
25). $h = 39^\circ i = 39^\circ j = 102^\circ k = 39^\circ l = 39^\circ m = 141^\circ$
26). $a = d = c = 60^\circ b = 120^\circ e = 60^\circ f = 60^\circ g = 60^\circ h = 120^\circ$
27). $f = 42^\circ g = h = 69^\circ i = 69^\circ j = 69^\circ k = 69^\circ$
28). $c = 53^\circ d = 127^\circ e = 53^\circ f = 53^\circ g = 74^\circ h = 74^\circ i = j = k = l = 53^\circ$