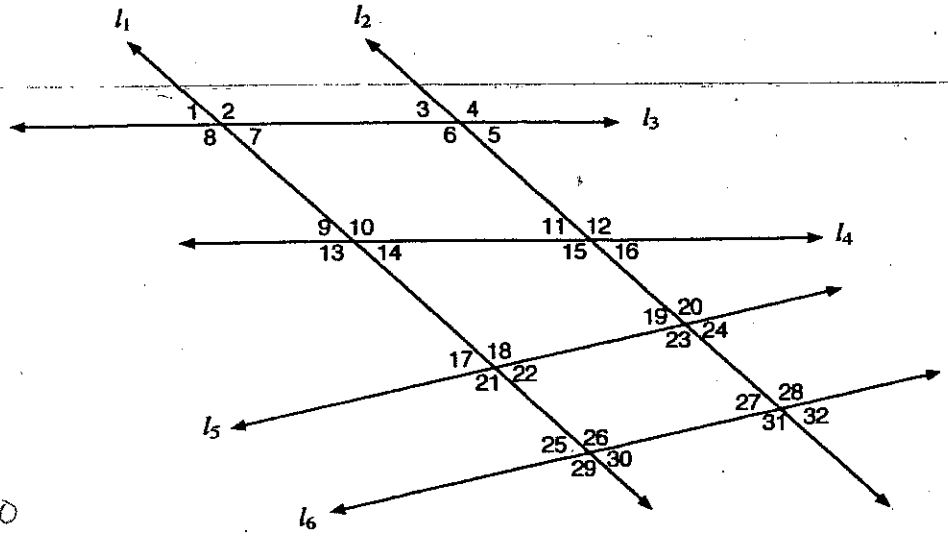
Determining Parallelism



$17y-443+-4y+233=180$
$13y-210=180$
$13y=390$
$y=30$

Use the figure above and the information below to determine if the stated lines are parallel.

$5x+7+26x-199=180$
$31x-192=180$
$31x=372$
$x=12$
$m\angle1=67$ $m\angle3=510-443$ 67

1. lines l_1 and l_2 given:
$m\angle1 = 5x + 7$,
$m\angle2 = 26x - 199$,
$m\angle3 = 17y - 443$,
$m\angle4 = -4y + 233$.
YES

$5x+52+26x+221=180$
$31x+273=180$
$31x=-93$ $x=-3$
$17y-335-26y+742=180$
$-9y+407=180$
$-9y=-227$
$y=25\frac{2}{9}$

2. lines l_3 and l_4 given:
$m\angle1 = 5x + 52$, $m\angle1=37$
$m\angle2 = 26x + 221$, 143 $m\angle9=143$
$m\angle9 = 17y - 355$, 73.4
$m\angle10 = -26y + 742$. 86.8
NO

$7x+5=-10x+396$
$17x=391$
$x=23$
$23y+543+-7y+5=180$
$16y+548=180$
$16y=-368$
$y=-23$

3. lines l_5 and l_6 given:
$m\angle19 = 7x + 5$, 166
$m\angle24 = -10x + 396$, 166
$m\angle28 = 23y + 543$, 14
$m\angle32 = -7y + 5$. 166
YES

$-33y-649+17y+477=180$
$-16y-172=180$
$y=-22$
$-27y+696=9x-96$
$792=36x$
$22=x$

4. lines l_4 and l_5 given:
$m\angle11 = -33y - 649$, 77
$m\angle15 = 17y + 477$, 103
$m\angle19 = -27x + 696$, 102
$m\angle24 = 9x - 96$. 102
NO

$7x+57=10x+66$
$-3x=-3$
$x=1$
$-31y+252=35y-210$
$462=66y$
$7=y$

5. lines l_1 and l_2 given:
$m\angle17 = 7x + 57$, 36
$m\angle22 = 10x + 66$, 36
$m\angle19 = -31y + 252$, 35
$m\angle24 = 35y - 210$. 35
NO

6. lines l_5 and l_6 given:
$m\angle23 = 30y + 300$, 60
$m\angle24 = -7y + 18$, 60
$m\angle27 = 4x - 32$, 60
$m\angle32 = 16x - 308$. 60
$30y+300-7y+18=180$
$23y+318=180$
$23y=-138$
$y=-6$
$4x-32=16x-308$
$276=12x$
$23=x$
YES

7. lines l_3 and l_4 given:
$m\angle2 = 11x + 98$, 143
$m\angle7 = -8x + 97$, 137
$m\angle9 = -27y + 57$, 138
$m\angle10 = 22y + 108$. 42
$11x+98-8x+97=180$
$3x+195=180$
$3x=-15$
$x=-5$
$-27y+57+22y+108=180$
$165-5y=180$
$-5y=15$
$y=-3$
NO

8. lines l_5 and l_6 given:
$m\angle18 = 3x + 150$, 114
$m\angle21 = 12x + 258$, 114
$m\angle29 = -11y + 4$, 114
$m\angle30 = 12y + 186$. 66
$3x+150=12x+258$
$-108=9x$
$x=-12$
$-11y+4+12y+186=1$
$y+190=180$
$y=-10$
YES

9. lines l_1 and l_2 given:
$m\angle15 = 3x + 58$, 124
$m\angle16 = 27x - 538$, 56
$m\angle9 = 16y - 120$, 56
$m\angle13 = 5y + 69$. 124
$3x+58+27x-538=180$
$30x-480=180$
$30x=660$
$x=22$
$16y-120+5y+69=$
$21y-51=180$
$21y=231$
$y=11$
YES

10. lines l_3 and l_4 given:
$m\angle4 = 7x - 32$, 80
$m\angle6 = -2x + 112$, 80
$m\angle11 = 20y + 679$, 79
$m\angle16 = 6y + 259$. 79
$7x-32=-2x+112$
$9x=144$
$x=16$
$20y+679=6y+25$
$14y=-420$
$y=-30$
NO