

CONFOUNDING ALIASES FOR FRACTIONAL FACTORIAL DESIGNS

# OF FACTORS (k)	FRACTION (k-p)	# OF RUNS	MAIN EFFECTS	2-WAY INTERACTIONS	3-WAY INTERACTIONS
3	2^{3-1}	4	A = BC B = AC C = AB		
4	2^{4-1}	8	A = BCD B = ACD C = ABD D = ABC	AB = CD AC = BD AD = BC	
5	2^{5-1}	16	Design Generators: E = ABCD	AB = CDE AC = BDE AD = BCE AE = BCD BC = ADE BD = ACE BE = ACD CD = ABE CE = ABD DE = ABC	
5	2^{5-2}	8	Design Generators: D = AB E = AC	A = BD = CE B = AD = CDE C = AE = BDE D = AB = BCE E = AC = BCD	BC = DE = ACD = ABE CD = BE = ABC = ADE
6	2^{6-1}	32	Design Generators: F = ABCDE		ABC = DEF ABD = CEF ABE = CDF ABF = CDE ACD = BEF ACE = BDF ACF = BDE ADE = BCF ADF = BCE AEF = BCD

6	2^{6-2}	16	A = BCE = DEF B = ACE = CDF C = ABE = BDF D = BCF = AEF E = ABC = ADF F = BCD = ADE	AB = CE AC = BE AD = EF AE = BC = DF AF = DE BD = CF BF = CD	ABD = CDE = ACF = BEF ACD = BDE = ABF = CEF
6	2^{6-3}	8	A=BD=CE=CDF=BEF B=AD=CF=CDE=AEF C=AE=BF=BDE=ADF D=AB=EF=BCE=ACF E=AC=DF=BCD=ABF F=BC=DE=ACD=ABE	CD = BE = AF = ABC = ADE = BDF = CEF	
7	2^{7-2}	32		AB = CDF AC = BDF AD = BCF AE = BCDG AF = BCD AG = BCDE BC = ADF = DEG BD = ACF = CEG BE = CDG BF = ACD BG = CDE CD = ABF = BEG CE = BDG CF = ABD CG = BDE DE = BCG DF = ABC DG = BCE	
7	2^{7-3}	16	A = BCE=DEF=CDG=BFG B = ACE=CDF=DEG=AFG C = ABE=BDF=ADG=EFG D = BCF=AEF=ACG=BEG E = ABC=ADF=BDG=CFG F = BCD=ADE=ABG=CEG	AB = CE = FG AC = BE = DG AD = EF = CG AE = BC = DF AF = DE = BG AG = CD = BF BD = CF = EG	ABD = CDE = ACF = BEF = BCG = AEG = DFG
7	2^{7-4}	8	A = BD = CE = FG = CDF = BEF = BCG = DEG B = AD = CF = EG = CDE = AEF = ACG = DFG C = AE = BF = DG = BDE = ADF = ABG = EFG D = AB = EF = CG = BCE = ACF = AEG = BFG E = AC = DF = BG = BCD = ABF = ADG = CFG F = BC = DE = AG = ACD = ABE = BDG = CEG G = CD = BE = AF = ABC = ADE = BDF = CEF		

<p>8 2^{8-3} 32</p> <p>Design Generators: F = ABC G = ABD H = BCDE</p>	<p>A = BCF = BDG B = ACF = ADG C = ABF = DFG D = ABG = CFG F = ABC = CDG G = ABD = CDF</p>	<p>AB = CF = DG AC = BF = EGH AD = EFH = BG AE = DFH = CGH AF = BC = DEH AG = BD = CEH AH = DEF = CEG BE = CDH = FGH BH = CDE = EFG CD = FG = BEH CE = BDH = AGH CG = DF = AEH CH = BDE = AEG DE = BCH = AFH DH = BCE = AEF EF = ADH = BGH EG = ACH = BFH EH = BCD = ADF = ACG = BFG FH = ADE = BEG GH = ACE = BEF</p>	<p>ABE = CEF = DEG ABH = CFH = DGH ACD = BDF = BCG = AFG</p>
<p>8 2^{8-4} 16</p> <p>Design Generators: E = BCD; F = ACD; G = ABC; H = ABD</p>	<p>A = CDF = BEF = BCG = DEG = BDH = CEH = FGH B = CDE = AEF = ACG = DFC = ADH = CFH = EGH C = BDE = ADF = ABG = EFG = AEH = BFH = DGH D = BCE = ACF = AEG = BFG = ABH = EFH = CGH E = BCD = ABF = ADG = CFG = ACH = DFH = BGH F = ACD = ABE = BDG = CEG = BCH = DEH = AGH G = ABC = ADE = BDF = CEF = CDH = BEH = AFH H = ABD = ACE = BCF = DEF = CDG = BEG = AFG</p>	<p>AB = EF = CG = DH AC = DF = BG = EH AD = CF = EG = BH AE = BF = DG = CH AF = CD = BE = GH AG = BC = DE = FH AH = BD = CE = FG</p>	

9	2^{9-4}	32	<p>A = BFG = CFH = DIF B = AFG = CGH = DGI C = AFH = BGH = DHI D = AFI = BGI = CHI F = ABG = ACH = ADI G = ABF = BCH = BDI H = ACF = BCG = CDI I = ADF = BDG = CDH</p>	<p>AB = FG = DEH = CEI AC = DEG = FH = BEI AD = CEG = BEH = FI AE = CDG = BDH = BCI = CHI AF = BG = CH = DI AG = CDE = BF = EHI AH = BDE = CF = EGI AI = BCE = DF = EHG BC = DEF = GH = AEI BD = CEF = AEH = GI BE = CDF = ADH = ACI = FHI BH = ADE = CG = EFI BI = ACE = DG = EFH CD = BEF = AEG = HI CE = BDF = ADG = ABI = FGI CI = ABE = EFG = DH DE = BCF = ACG = ABH = FGH EF = BCD = DGH = CGI = BHI EG = ACD = DFH = CFI = AHI EH = ABD = DFG = BFI = AGI EI = ABC = CFG = BFH = AGH</p>	<p>AEF = BEG = CEH = DEI</p>
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Design Generators:
F = BCDE
G = ACDE
H = ABDE
I = ABCE

<p>9</p>	<p>2^{9-5} 16</p>	<p> A = FI = BCE = DEF = CDG = BFG = BDH = CFH = EGH B = GI = ACE = CDF = DEG = AFG = ADH = EFH = CGH C = HI = ABE = BDF = ADG = EFG = DEH = AFH = BGH D = EI = BCF = AEF = ACG = BEG = ABH = CEH = FGH E = DI = ABC = ADF = BDG = CFG = CDH = BFH = AGH F = AI = BCD = ADE = ABG = CEG = ACH = BEH = DGH G = BI = ACD = BDE = ABF = CEF = BCH = AEH = DFH H = CI = ABD = CDE = ACF = BEF = BCG = AEG = DFG I = DE = AF = BG = CH </p>	<p> AB = CE = FG = DH = CDI = BFI = AGI = EHI AC = BE = DG = FH = BDI = CFI = EGI = AHI AD = EF = CG = BH = BCI = AEI = DFI = CHI AE = BC = DF = GH = ADI = EFI = CGI = BHI AG = CD = BF = EH = ABI = CEI = FGI = DHI AH = BD = CF = EG = ACI = BEI = DGI = FHI </p>	
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Design Generators:

E = ABC

F = BCD

G = ACD

H = ABD

I = ABCD

10	2 ¹⁰⁻⁵	32	<p>A = EFJ=DGJ =CHJ=BIJ B = EFI=DGI=CHI =AIJ C = EFH=DGH=BHI=AHJ D = EFG=CGH=BGI=AGJ E = DFG=CFH=BFI =AFJ F = DEG=CEH=BEI=AEJ G = DEF=CDH= BDI=ADJ H = CEF=CDG= BGI=ACJ I = BEF=BDG=BCH =ABJ J = AEF=ADG=ACH=ABI</p>	<p>AB = CDF = CEG = DEH = FGH = IJ AC = BDF = BEG = DEI = FG I = HJ AD = BCF = BEH = CEI = FHI = GJ AE = BCG = BDH = CDI = GHI = FJ AF = BCD = BGH = CGI = DHI = EJ AG = BCE = BFH = CFI = EHI = DJ AH = BDE = BFG = DFI = EGI = CJ AI = CDE = CFG = DFH = EGH = BJ AJ = EF = DG = CH = BI BC = ADF = AEG = HI = DEJ = FGJ BD = ACF = AEH = GI = CEJ = FHJ BE = ACG = ADH = FI = CDJ = GHJ BF = ACD = AGH = EI = CGJ = DHJ BG = ACE = AFH = DI = CFJ = EHJ BH = ADE = AFG = CI = DFJ = EGJ CD = ABF = GH = AEI = BEJ = FIJ CE = ABG = FH = ADI = BDJ = GIJ CF = ABD = EH = AGI = BGJ = DIJ CG = ABE = DH = AFI = BFJ = EIJ DE = FG = ABH = ACI = BCJ = HIJ DF = ABC = EG = AHI = BHJ = CIJ</p>
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Design Generators:
F = ABCD
G = ABCE
H = ABDE
I = ACDE
J = BCDE