



Solve each equation.

$$1) \frac{137}{14} \left(\frac{9}{13}m - 1\frac{1}{2} \right) = 2 \left(\frac{1}{5}m + \frac{13}{11} \right)$$

$$2) 1\frac{3}{5} \left(1\frac{1}{8}n + \frac{9}{7} \right) = \frac{3}{10} \left(n - \frac{3}{2} \right)$$

$$3) 3\frac{4}{11} \left(\frac{31}{5}r + 1 \right) = 6\frac{9}{10}r + 2\frac{3}{10} \left(\frac{1}{6}r + \frac{11}{6} \right)$$

$$4) x - 3\frac{5}{13} - \frac{2}{7} = -1\frac{3}{7}\left(x + 1\frac{4}{5}\right) + \frac{20}{11}\left(-3\frac{2}{5}x - 2\frac{7}{10}\right)$$

$$5) -\frac{2}{3}\left(-\frac{3}{13}x + 1\right) = -1\frac{9}{10}\left(1\frac{5}{12}x + 1\right)$$

$$6) \frac{5}{2}\left(4\frac{8}{13}b + 7\frac{5}{9}\right) + 1\frac{4}{5}\left(\frac{4}{9}b + 1\right) = 1\frac{5}{12}b - \frac{1}{10}b$$

$$7) 7\frac{1}{4}\left(-3\frac{5}{7}v - 3\frac{6}{7}\right) = -12\frac{1}{12} + \frac{53}{9}\left(\frac{50}{11}v - 1\right)$$

$$8) -\left(n - 3\frac{8}{9}\right) = -\frac{1}{11}\left(-\frac{1}{2}n + 1\right)$$

$$9) \frac{25}{6} \left(2\frac{1}{8}p - 1 \right) = \frac{3}{13} \left(-12p - \frac{4}{7} \right)$$

$$10) -2\frac{1}{12} \left(\frac{19}{10}x + \frac{35}{9} \right) + x = \frac{4}{7} \left(x + \frac{62}{9} \right)$$

$$11) -3\frac{4}{13} \left(1\frac{5}{11}a - 3\frac{13}{14} \right) = -1\frac{4}{9} \left(2\frac{4}{11}a + \frac{1}{3} \right) + \frac{3}{4}a$$

$$12) 4\frac{7}{8} + 1\frac{9}{14} \left(k + \frac{2}{7} \right) = 5k + \frac{30}{7} \left(\frac{5}{6}k + \frac{18}{11} \right)$$

$$13) \frac{1}{2} \left(-2n + \frac{54}{13} \right) = -1\frac{3}{8} \left(n + \frac{20}{3} \right)$$

$$14) -\frac{10}{7}\left(\frac{1}{12}p + 3\frac{6}{13}\right) = -3\frac{3}{8}\left(7\frac{3}{4}p - \frac{8}{11}\right)$$

$$15) \frac{12}{7}m - \frac{37}{12}\left(m + \frac{65}{14}\right) = \frac{2}{3}\left(\frac{25}{4}m + 9\right)$$

$$16) -\frac{5}{14}\left(x - \frac{3}{5}\right) = -\left(-1\frac{11}{12}x + 1\right) + 1\frac{1}{12}$$

$$17) 1\frac{1}{7}\left(4\frac{3}{14}r + \frac{4}{5}\right) = -\frac{17}{9}\left(6\frac{3}{8}r + 1\right) - 3\frac{1}{2}r$$

$$18) -\frac{6}{7}\left(6\frac{1}{2}n + 1\right) - \frac{3}{8} = -1\frac{2}{3}\left(-\frac{7}{4}n + \frac{41}{6}\right) + 3\frac{5}{14}n$$

$$19) -\frac{5}{3}\left(-2\frac{9}{13}b+2\right)+\frac{3}{2}\left(-\frac{1}{5}b-3\frac{2}{5}\right)=-1\frac{1}{11}b+6+\frac{2}{5}b+\frac{81}{14}$$

$$20) 6\frac{3}{8}\left(3\frac{7}{8}x-\frac{2}{3}\right)-\frac{1}{3}\left(1\frac{7}{13}x+1\right)=\frac{19}{13}x+7\frac{1}{9}-x$$

$$21) -\frac{42}{11}\left(-3\frac{6}{11}a+6\frac{3}{4}\right)=\frac{23}{13}\left(2a+\frac{9}{11}\right)$$

$$22) \frac{34}{9}\left(7\frac{5}{6}x+1\right)=-5\left(x-\frac{13}{6}\right)$$

$$23) -\frac{5}{14}\left(-3\frac{1}{10}v - 5\right) + \frac{17}{10} = -\frac{5}{8}\left(\frac{46}{7}v + \frac{3}{5}\right)$$

$$24) -1\frac{1}{3}\left(-\frac{7}{9}n + \frac{2}{11}\right) - 5\frac{5}{6} = \frac{37}{8}\left(-\frac{19}{10}n + 1\right) - 1\frac{2}{3}n$$

$$25) \frac{1}{3}\left(5\frac{1}{14}n + \frac{13}{3}\right) = -1\frac{6}{7}n + \frac{5}{11}\left(2n + \frac{13}{2}\right)$$

$$26) -9\left(\frac{7}{8}k - 7\frac{3}{4}\right) - \frac{11}{7} = -3\frac{7}{9}\left(7\frac{3}{10}k + 1\frac{4}{5}\right)$$

$$27) \frac{3}{8} + 4\frac{1}{10}\left(p - 1\frac{1}{7}\right) = -\frac{1}{6} + \frac{1}{3}\left(p - \frac{3}{2}\right)$$

$$28) \frac{10}{9}x - 3\frac{1}{2} + \frac{2}{3}x = \frac{4}{3}\left(2\frac{11}{14}x + \frac{43}{7}\right) + 1\frac{4}{7}\left(1\frac{3}{10}x + \frac{3}{2}\right)$$

$$29) -\frac{9}{5}\left(x + \frac{3}{2}\right) = \frac{3}{2}\left(x - 2\frac{3}{14}\right)$$

$$30) -1\frac{3}{7}\left(1\frac{1}{9}n + \frac{33}{5}\right) - 1\frac{3}{14}\left(7\frac{5}{11}n - \frac{23}{8}\right) = \frac{3}{14}n - \frac{19}{13}n$$

1) $\left\{ 2\frac{85941}{127622} \right\}$

5) $\left\{ -\frac{1924}{4439} \right\}$

9) $\left\{ \frac{17624}{50771} \right\}$

13) $\left\{ -29\frac{115}{117} \right\}$

17) $\left\{ -\frac{49448}{359115} \right\}$

21) $\left\{ 2\frac{22723}{31456} \right\}$

25) $\left\{ \frac{91}{159} \right\}$

29) $\left\{ \frac{29}{154} \right\}$

2) $\left\{ -1\frac{47}{70} \right\}$

6) $\left\{ -1\frac{22621}{25791} \right\}$

10) $\left\{ -3\frac{2191}{5337} \right\}$

14) $\left\{ \frac{711072}{2502071} \right\}$

18) $\left\{ \frac{5119}{5970} \right\}$

22) $\left\{ \frac{381}{1868} \right\}$

26) $\left\{ -3\frac{39993}{49651} \right\}$

30) $\left\{ -\frac{24453}{38680} \right\}$

3) $\left\{ \frac{563}{8957} \right\}$

7) $\left\{ -\frac{13849}{74423} \right\}$

11) $\left\{ 6\frac{64184}{232113} \right\}$

15) $\left\{ -3\frac{623}{930} \right\}$

19) $\left\{ 4\frac{21222}{146489} \right\}$

23) $\left\{ -\frac{1081}{1460} \right\}$

27) $\left\{ \frac{3061}{3164} \right\}$

4) $\left\{ -\frac{3814}{8619} \right\}$

8) $\left\{ 3\frac{167}{207} \right\}$

12) $\left\{ -\frac{7195}{29876} \right\}$

16) $\left\{ \frac{11}{191} \right\}$

20) $\left\{ \frac{87568}{177681} \right\}$

24) $\left\{ \frac{254250}{273031} \right\}$

28) $\left\{ -3\frac{1329}{2507} \right\}$