28A

1) done

2) done
Feel free to use canceling to simplify your work.

3) $\frac{5}{1}\cdot\frac{1}{5}A=\frac{3}{1}\cdot\frac{5}{1}$
$A=\frac{15}{1}=15$

4) $\frac{1}{5}(15)=3$
$3=3$

5) $\frac{1}{7}Y-4=2$
$\frac{1}{7}Y=6$
$\frac{7}{1}\cdot\frac{1}{7}Y=\frac{6}{1}\cdot\frac{7}{1}$
$Y=\frac{42}{1}=42$

6) $\frac{1}{7}(42)-4=2$
$6-4=2$
$2=2$

7) $\frac{3}{8}B+8=14$
$\frac{3}{8}B=6$
$\frac{8}{3}\cdot\frac{3}{8}B=\frac{6}{1}\cdot\frac{8}{3}$
$B=\frac{48}{3}=16$

8) $\frac{3}{8}\left(\frac{16}{1}\right)+8=14$
$\frac{48}{8}+8=14$
$6+8=14$
$14=14$

9) $\frac{3}{2}\cdot\frac{2}{3}Z=\frac{12}{1}\cdot\frac{3}{2}$
$Z=\frac{36}{2}=18$

10) $\frac{2}{3}\left(\frac{18}{1}\right)=12$
$\frac{36}{3}=12$
$12=12$

11) $\frac{2}{5}C-2=2$
$\frac{2}{5}C=4$
$\frac{5}{2}\cdot\frac{2}{5}C=\frac{4}{1}\cdot\frac{5}{2}$
$C=\frac{20}{2}=10$

12) $\frac{2}{5}\left(\frac{10}{1}\right)-2=2$
$\frac{20}{5}-2=2$
$4-2=2$
$2=2$

28B

1) $\frac{1}{4}G-4=2$
$\frac{1}{4}G=6$
$\frac{4}{1}\cdot\frac{1}{4}G=\frac{6}{1}\cdot\frac{4}{1}$
$G=\frac{24}{1}=24$

2) $\frac{1}{4}(24)-4=2$
$\frac{1}{4}\left(\frac{24}{1}\right)-4=2$
$\frac{24}{4}-4=2$
$6-4=2$
$2=2$

3) $\frac{5}{4}\cdot\frac{4}{5}D=\frac{40}{1}\cdot\frac{5}{4}$
$D=\frac{200}{4}=50$

4) $\frac{4}{5}\left(\frac{50}{1}\right)=40$
$\frac{200}{5}=40$
$40=40$

5) $\frac{1}{10}H-4=0$
$\frac{1}{10}H=4$
$\frac{10}{1}\cdot\frac{1}{10}H=\frac{4}{1}\cdot\frac{10}{1}$
$H=\frac{40}{1}=40$

6) $\frac{1}{10}(40)-4=0$
$4-4=0$
$0=0$

7) $\frac{5}{8}E-5=20$
$\frac{5}{8}E=25$
$\frac{8}{5}\cdot\frac{5}{8}E=\frac{25}{1}\cdot\frac{8}{5}$
$E=\frac{200}{5}=40$

8) $\frac{5}{8}(40)-5=20$
$\frac{5}{8}\left(\frac{40}{1}\right)-5=20$
$\frac{200}{8}-5=20$
$25-5=20$

9) $\frac{4}{1}\cdot\frac{1}{4}J=\frac{7}{1}\cdot\frac{4}{1}$
$J=\frac{28}{1}=28$

10) $\frac{1}{4}(28)=7$
$7=7$

11) $\frac{5}{9}F+9=14$
$\frac{5}{9}F=5$
$\frac{9}{5}\cdot\frac{5}{9}F=\frac{5}{1}\cdot\frac{9}{5}$
$F=\frac{45}{5}=9$

12) $\frac{5}{9}\left(\frac{45}{5}\right)+9=14$
$\frac{45}{9}+9=14$
$5+9=14$
$14=14$

28C

1) $\frac{1}{3}K+3=11$
$\frac{1}{3}K=8$
$\frac{3}{1}\cdot\frac{1}{3}K=\frac{8}{1}\cdot\frac{3}{1}$
$K=\frac{24}{1}=24$

2) $\frac{1}{3}\left(\frac{24}{1}\right)+3=11$
$\frac{24}{3}+3=11$
$8+3=11$
$11=11$

3) $\frac{5}{1}\cdot\frac{1}{5}G=\frac{8}{1}\cdot\frac{5}{1}$
$G=\frac{40}{1}=40$

4) $\frac{1}{5}\left(\frac{40}{1}\right)=8$
$\frac{40}{5}=8$
$8=8$

5) $\frac{3}{5}L+3=18$
$\frac{3}{5}L=15$
$\frac{5}{3}\cdot\frac{3}{5}L=\frac{15}{1}\cdot\frac{5}{3}$
$L=\frac{75}{3}=25$

6) $\frac{3}{5}(25)+3=18$
$\frac{3}{5}\left(\frac{25}{1}\right)+3=18$
$\frac{75}{5}+3=18$
$15+3=18$

7) $\frac{5}{12}R+5=25$
$\frac{5}{12}R=20$
$\frac{12}{5}\cdot\frac{5}{12}R=\frac{20}{1}\cdot\frac{12}{5}$
$R=\frac{240}{5}=48$

8) $\frac{5}{12}\left(\frac{48}{1}\right)+5=25$
$\frac{240}{12}+5=25$
$20+5=25$
$25=25$

9) $\frac{3}{2}\cdot\frac{2}{3}M=\frac{10}{1}\cdot\frac{3}{2}$
$M=\frac{30}{2}=15$

10) $\frac{2}{3}\left(\frac{15}{1}\right)=10$
$\frac{30}{3}=10$
$10=10$

11) $\frac{2}{9}S+6=14$
$\frac{2}{9}S=8$
$\frac{9}{2}\cdot\frac{2}{9}S=\frac{8}{1}\cdot\frac{9}{2}$
$S=\frac{72}{2}=36$

12) $\frac{2}{9}(36)+6=14$
$\frac{2}{9}\left(\frac{36}{1}\right)+6=14$
$\frac{72}{9}+6=14$
$8+6=14$
$14=14$

28D

1) $\frac{1}{5}T + 4 = 8$

$\frac{1}{5}T = 4$

$\frac{5}{1} \cdot \frac{1}{5}T = \frac{4}{1} \cdot \frac{5}{1}$

$T = \frac{20}{1} = 20$

2) $\frac{1}{5}(20) + 4 = 8$

$\frac{1}{5}\left(\frac{20}{1}\right) + 4 = 8$

$\frac{20}{5} + 4 = 8$

$4 + 4 = 8$

$8 = 8$

3) $\frac{3}{4}N - 6 = 21$

$\frac{3}{4}N = 27$

$\frac{4}{3} \cdot \frac{3}{4}N = \frac{27}{1} \cdot \frac{4}{3}$

$N = \frac{108}{3}$

$N = 36$

4) $\frac{3}{4}(36) - 6 = 21$

$\frac{3}{4}\left(\frac{36}{1}\right) - 6 = 21$

$\frac{108}{4} - 6 = 21$

$27 - 6 = 21$

$21 = 21$

5) $\frac{22}{7}\left(14^2\right) = \frac{22}{\cancel{7}} \cdot \frac{\overset{28}{\cancel{196}}}{1} =$

$\frac{616}{1} = 616$ sq. ft.

6) $\frac{2}{1} \cdot \frac{22}{\cancel{7}} \cdot \frac{\cancel{14}^{2}}{1} = \frac{88}{1} = 88$ ft.

7) $\frac{1}{\cancel{2}} \times \frac{\cancel{3}}{\cancel{9}} \times \frac{\cancel{9}^{3}}{11} = \frac{3}{11}$

8) $\frac{\cancel{7}}{\cancel{8}} \times \frac{\cancel{8}}{\cancel{3}} \times \frac{\cancel{6}^{2}}{\cancel{7}} = \frac{2}{1} = 2$

9) $\frac{3}{1} \div \frac{1}{2} = \frac{3}{1} \times \frac{2}{1} = \frac{6}{1} = 6$

10) $\frac{31}{5} \div \frac{31}{20} = \frac{\cancel{31}}{\cancel{5}} \times \frac{\cancel{20}^{4}}{\cancel{31}} = \frac{4}{1} = 4$

11) 21 ft. < 36 ft.

12) 10 pts. < 11 pts.

13) 5 qts. > 4 qts.

14) $2 + 7 + 9 = 18$
$18 \div 3 = 6$

15) $5 + 5 + 9 + 13 = 32$
$32 \div 4 = 8$

16) $2 + 5 + 8 + 9 = 24$
$24 \div 4 = 6$

17) $77 + 80 + 95 + 100 = 352$
$352 \div 4 = 88$

18) 70

28E

1) $\frac{1}{6}U + 2 = 3$

$\frac{1}{6}U = 1$

$\frac{6}{1} \cdot \frac{1}{6}U = \frac{1}{1} \cdot \frac{6}{1}$

$U = \frac{6}{1} = 6$

2) $\frac{1}{6}(6) + 2 = 3$

$\frac{1}{6}\left(\frac{6}{1}\right) + 2 = 3$

$1 + 2 = 3$

$3 = 3$

3) $\frac{5}{2} \cdot \frac{2}{5}P = \frac{2}{1} \cdot \frac{5}{2}$

$P = \frac{10}{2} = 5$

4) $\frac{2}{5}\left(\frac{5}{1}\right) = 2$

$\frac{10}{5} = 2$

$2 = 2$

5) $\frac{22}{7}\left(42^2\right) = \frac{22}{\cancel{7}} \cdot \frac{\overset{252}{\cancel{1764}}}{1} =$

$\frac{5544}{1} = 5{,}544$ sq. in.

6) $\frac{2}{1} \times \frac{22}{\cancel{7}} \times \frac{\overset{6}{\cancel{42}}}{1} = 264$ in.

7) $\frac{\overset{3}{\cancel{15}}}{\underset{2}{\cancel{14}}} \times \frac{\cancel{7}}{4} \times \frac{1}{\underset{5}{\cancel{25}}} = \frac{3}{40}$

8) $\frac{\overset{2}{\cancel{14}}}{\underset{3}{\cancel{21}}} \times \frac{\cancel{5}}{\cancel{2}} \times \frac{\cancel{8}}{\cancel{5}} = \frac{2}{3}$

9) $\frac{3}{6} \div \frac{2}{3} = \frac{3}{6} \times \frac{3}{2} = \frac{9}{12} = \frac{3}{4}$

10) $\frac{24}{7} \div \frac{18}{7} = \frac{24 \div 18}{1} =$

$\frac{24}{18} = \frac{4}{3} = 1\frac{1}{3}$

11) 32 oz. = 32 oz.

12) 14,000 lbs > 8,000 lbs.

13) 120 in. < 125 in.

14) $4 + 5 + 6 = 15$
$15 \div 3 = 5$

15) $6 + 7 + 9 + 10 = 32$
$32 \div 4 = 8$

16) $4 + 7 + 10 = 21$
$21 \div 3 = 7$

17) $4\frac{1}{2} + 4\frac{1}{2} = 8\frac{2}{2} = 9$

$6\frac{1}{3} + 6\frac{1}{3} = 12\frac{2}{3}$

$12\frac{2}{3} + 9 = 21\frac{2}{3}$ in.

18) $\frac{\overset{3}{\cancel{9}}}{2} \times \frac{19}{\cancel{3}} = \frac{57}{2} =$

$28\frac{1}{2}$ sq. in.

19) 2 x 2 x 2 x 2 x 2 x 2

20) 16

28F

1) $\frac{3}{16}V - 3 = 12$

$\frac{3}{16}V = 15$

$\frac{16}{3} \cdot \frac{3}{16}V = \frac{15}{1} \cdot \frac{16}{3}$

$V = \frac{240}{3} = 80$

2) $\frac{3}{16}(80) - 3 = 12$

$\frac{3}{16}\left(\frac{80}{1}\right) - 3 = 12$

$\frac{240}{16} - 3 = 12$

$15 - 3 = 12$

$12 = 12$

3) $5Q + 4 = 19$

$5Q = 15$

$\frac{1}{5} \cdot 5Q = \frac{15}{1} \cdot \frac{1}{5}$

$Q = \frac{15}{5} = 3$

4) $5(3) + 4 = 19$

$15 + 4 = 19$

$19 = 19$

5) $\frac{22}{7}\left(2^2\right) = \frac{22}{7} \cdot \frac{4}{1} =$

$\frac{88}{7} = 12\frac{4}{7}$ sq. in.

6) $\frac{2}{1} \cdot \frac{22}{7} \cdot \frac{2}{1} =$

$\frac{88}{7} = 12\frac{4}{7}$ in.

7) $\frac{\cancel{2}}{1} \times \frac{\cancel{3}}{\cancel{10}_{5}} \times \frac{\cancel{5}}{\cancel{6}_{2}} = \frac{1}{2}$

8) $\frac{\cancel{2}\cancel{10}}{\cancel{3}\cancel{21}} \times \frac{\cancel{2}\cancel{14}}{\cancel{5}} \times \frac{2}{\cancel{6}\,11} = \frac{8}{11}$

9) $\frac{1}{2} \div \frac{1}{10} = \frac{1}{2} \times \frac{10}{1} = \frac{10}{2} = 5$

10) $\frac{37}{8} \div \frac{41}{12} = \frac{37}{\cancel{8}_{2}} \times \frac{\cancel{12}^{3}}{41} =$

$\frac{111}{82} = 1\frac{29}{82}$

11) 256 oz. > 1 oz.

12) 2,640 ft. = 2,640 ft.

13) 9 in. < 10 in.

14) $4 + 8 + 10 + 14 = 36$

$36 \div 4 = 9$

15) $6 + 7 + 9 + 14 = 36$

$36 \div 4 = 9$

16) $6 + 6 + 12 = 24$

$24 \div 3 = 8$

17) $2\frac{1}{4} + 1\frac{1}{4} = 3\frac{2}{4} = 3\frac{1}{2}$

$3\frac{1}{2} + 1\frac{1}{2} = 4\frac{2}{2} = 5$

$5 \div 3 = \frac{5}{3} = 1\frac{2}{3}$ mi.

18) $\frac{4}{3} \times \frac{4}{3} \times \frac{4}{3} = \frac{64}{27} = 2\frac{10}{27}$ cu. in.

19) 30: 2, 3, 5, 6, 10, 15, 30

45: 3, 5, 9, 15, 45

GCF = 15

20) 15

29A

1) done

2) $\frac{1}{2} = \frac{5}{10} = .5 = \frac{50}{100} = .50$

3) $\frac{4}{5} = \frac{8}{10} = .8 = \frac{80}{100} = .80$

4) done

5) $\frac{5}{5} = \frac{100}{100} = 100\%$

6) done

7) $\frac{1}{2} = \frac{50}{100} = .50 = 50\%$

29B

1) done

2) $\frac{3}{4} = \frac{75}{100} = .75$

3) $\frac{2}{5} = \frac{4}{10} = .4 = \frac{40}{100} = .40$

4) $\frac{3}{5} = \frac{60}{100} = 60\%$

5) $\frac{4}{5} = \frac{80}{100} = 80\%$

6) $\frac{1}{4} = \frac{25}{100} = .25 = 25\%$

7) $\frac{3}{4} = \frac{75}{100} = .75 = 75\%$

29C

1) $\frac{1}{5} = \frac{2}{10} = .2 = \frac{20}{100} = .20$

2) $\frac{3}{5} = \frac{6}{10} = .6 = \frac{60}{100} = .60$

3) $\frac{1}{4} = \frac{25}{100} = .25$

4) $\frac{5}{5} = \frac{100}{100} = 100\%$

5) $\frac{2}{5} = \frac{40}{100} = 40\%$

6) $\frac{3}{4} = \frac{75}{100} = .75 = 75\%$

7) $\frac{1}{2} = \frac{50}{100} = .50 = 50\%$