# Math351
## Practice Exam #02

1. **(See Video)** Add or subtract as indicated. Reduce when possible.

   a) $\dfrac{7}{3} - \dfrac{2}{3}$
   b) $\dfrac{7}{4} + \dfrac{8}{5}$
   c) $\dfrac{1}{2} - \dfrac{1}{4} - \dfrac{1}{6}$
   d) $\dfrac{2b}{a} - \dfrac{9b}{a}$

2. **(See Video)** Multiply or divide as indicated. Reduce when possible.

   a) $\dfrac{11}{2} \div \dfrac{11}{6}$
   b) $\dfrac{a}{4} \cdot \dfrac{3}{b} \div \dfrac{3}{4}$
   c) $\dfrac{3}{4} \div \dfrac{1}{2} \div \dfrac{5}{4}$

3. **(See Video)** Simplify as much as possible.

   a) $-\dfrac{3}{4} \cdot \dfrac{14}{4}$
   b) $\left(\dfrac{3}{2}\right)^3 - \dfrac{1}{8}$
   c) $1 + \dfrac{1}{2} \div \left(\dfrac{1}{2}\right)^3$
   d) $2 - \dfrac{1}{6} \div \left(-\dfrac{1}{24}\right)$

4. **(See Video)** Find the value of each expression when $x = 3$. Reduce when possible.

   a) $3 - 5x - x$
   b) $3x^2 - 2x + 1$
   c) $\dfrac{x}{6} - \dfrac{3}{3x}$

5. **(See Video)** Reduce the following fractions to their lowest terms.

   a) $\dfrac{12}{20}$
   b) $\dfrac{8ab}{16b}$
   c) $\dfrac{48xyz}{8yz}$
   d) $\dfrac{16x^2 y^5 z^4}{8yz}$

6. **(See Video)** Simplify the expressions below as much as possible.

   a) $\left[\left(\dfrac{4}{5}\right)^2 + \dfrac{4}{25}\right]^2$
   b) $\left[\left(\dfrac{3}{2}\right)^2 - \dfrac{25}{8}\right]^2 - \dfrac{1}{16}$

7. **(See Video)** Simplify the expressions below as much as possible.

   a) $\dfrac{\dfrac{1}{2} - \dfrac{3}{5}}{\dfrac{2}{5} + \dfrac{7}{10}}$
   b) $\dfrac{\dfrac{5}{3} + \dfrac{1}{6}}{\dfrac{4}{5} - \dfrac{4}{15}}$
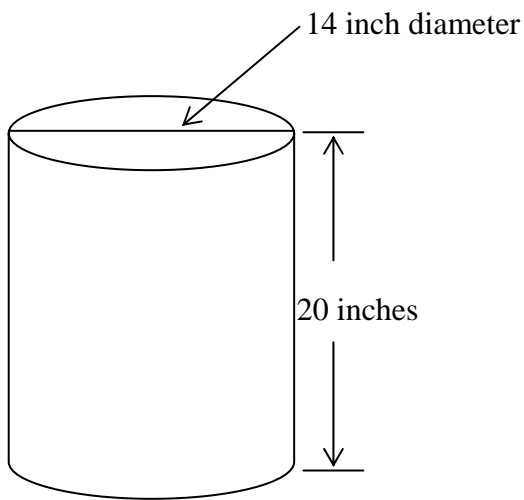
8. **(See Video)** Solve for x. Reduce when possible.

   a) $2x - 5 = 9$
   b) $3x + 5 = 20$
   c) $\dfrac{3}{4}x - \dfrac{5}{3} = -2$

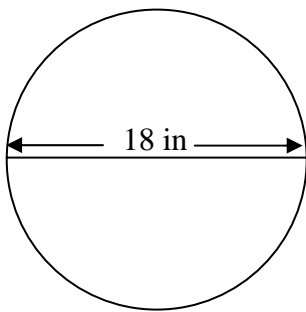9. **(See Video)** Calculate the volume of the right circular cylinder below.

14 inch diameter

$$V = \pi r^2 h$$

20 inches

10. **(See Video)** What number must be <u>subtracted</u> from 0.34 to obtain 6.46?

11. **(See Video)** Find the circumference and the area of the circle.

Circle: $A = \pi r^2$; $C = 2\pi r$

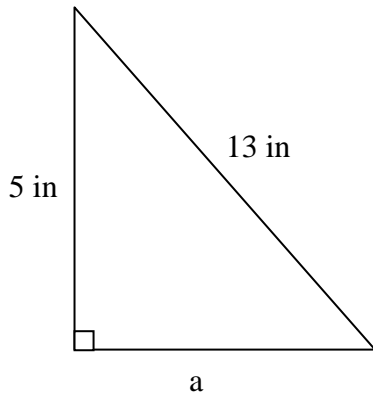18 in

12. **(See Video)** Change each decimal to a fraction. Reduce to lowest terms.

a) 0.25            b) 0.875            c) 0.008

13. **(See Video)** Solve for a.   $c^2 = a^2 + b^2$

13 in

5 in

a

14. Solve for x.

a) $x-5=-4$

$$x=1$$

b) $3x+6=8$

$$x=\frac{2}{3}$$

c) $3+2x=-2-5$

$$x=-5$$

15. Solve for x.

a) $2x-1-3x-4=-6-8$

$$x=9$$

b) $\frac{1}{2}x-1=\frac{2}{3}$

$$x=\frac{10}{3}$$

c) $\frac{5}{3}x-\frac{3}{2}=\frac{5}{6}$

$$x=\frac{7}{5}$$

16. Solve for x.

a) $\frac{5}{3}x-\frac{5}{2}x=\frac{1}{6}+\frac{3}{4}$

$$x=-\frac{11}{10}$$

b) $\frac{2}{3}x-3+\frac{1}{2}x-\frac{3}{4}=\frac{5}{6}+\frac{5}{3}-x$

$$x=\frac{75}{26}$$