

Monday

Which statement below is true about the graph of $y = ax^2$ if a changes from 3 to -5 ?

- A. The graph becomes wider and opens up.
- B. The graph becomes narrower and opens up.
- C. The graph becomes wider and opens down.
- D. The graph becomes narrower and opens down.

Tuesday

A homeowner wants to increase the size of his deck that now measures 15 feet by 18 feet. His homeowner's association declares that no deck is to be more than 928 square feet. If the length and width of the deck are to be increased by the same amount, find, **to the nearest tenth**, the maximum number of feet by which the length of the deck may be legally increased.

- A. 14 feet
- B. 21 feet
- C. 28 feet
- D. 32 feet

Wednesday

24. The heat index, h , varies directly with the temperature t and inversely with the relative humidity, r . If k is the constant of variation, which equation could be used to represent the relationship among heat index, temperature, and relative humidity?

- A. $k = \frac{ht}{r}$
- B. $h = \frac{kr}{t}$
- C. $h = krt$
- D. $h = \frac{kt}{r}$

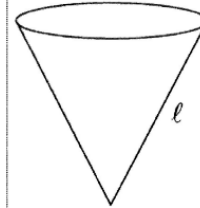
Thursday

13. Simplify the expression $\frac{3x^{-4}y^5}{(2x^3y^{-7})^{-2}}$ using only positive exponents.

- A. $\frac{y^9}{12x^2}$
- B. $\frac{12x^2}{y^9}$
- C. $\frac{3y^{12}}{2x}$
- D. $\frac{2x}{3y^{12}}$

Friday

32. The slant height, ℓ , of the conical water tank shown in the accompanying diagram is $\ell = \sqrt[3]{\frac{8v}{\pi}}$. Solve for v , in terms of ℓ and π .



- A. $v = \frac{\pi\ell^{1/2}}{8}$
- B. $v = \frac{\pi\ell^3}{8}$
- C. $v = \frac{\pi\ell^2}{8}$
- D. $v = \frac{\ell^3}{8\pi}$